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A SALIVARY INDEX TO RENAL FUNCTION *

PHILIP S. HENCH, M.D.
AND
MARTHA ALDRICH, A.B.
ROCHESTER, MINN.

I. THE CLINICAL USE AND SIGNIFICANCE OF THE SALIVARY UREA INDEX

That the determination of the blood urea is the most valuable test for estimating renal impairment with regard to retention of nitrogenous metabolites is generally recognized. However, the estimation of the blood urea, although a comparatively simple procedure if certain laboratory facilities are available, is too complicated and laborious for the use of the general practitioner.

Urea is easily diffusible and is almost uniformly distributed in all tissues [1] and fluids of the body, including the spinal fluid and mammary gland excretion.[2] Myers and Fine [3] report that urea is present in the spinal fluid in 88 per cent. of its blood concentration. If standard solutions of urea are used, 93 per cent. will dialyze in twenty-four hours.[4]

We have demonstrated in a previous paper [5] that the concentration of urea in saliva is practically the same as the concentration of urea in the blood. The salivary urea is estimated from the combined urea and ammonia nitrogen, for there is conclusive evidence that by far the greater part, if not all, of the salivary ammonia nitrogen is a product of urea by hydrolysis. The concentration of urea in saliva varies somewhat in different persons. The probable causes of variation and the exact relationship between the salivary urea and the blood urea are discussed in detail in a previous paper,[5] and in Part II of this paper.

The average value of urea concentration in the saliva is approximately 80 per cent. of that of the blood urea. Therefore, for practical purposes 16 mg. of combined ammonia and urea nitrogen for each 100 c.c. of saliva has been considered the upper limit of normal, corresponding to 20 mg. of urea nitrogen for each 100 c.c. of blood.

In cases of urea retention, the combined ammonia and urea nitrogen of the saliva is increased in definite amounts, and closely parallels the urea nitrogen of the blood. This fact is of practical significance in determining renal function, since the availability of saliva recommends it for practical usage. The value of determinations of salivary urea would still further increase with the development of a method sufficiently accurate and easier of application than the urease method. Such a method, based on the mercury combining power of saliva, has been developed.

HISTORICAL NOTES

The combination of urea with mercuric nitrate, forming a complex mercuric salt, was used by Liebig,[6] in 1853, as a basis for his method for the determination of urea in urine. Pflüger [7] showed that under the varying reactions of the urine incident to the method, not only urea, but all the nitrogenous compounds of the urine were precipitated by the mercury; and Freund and Fellner [8] made this fact a basis for a method for fractional precipitation of all nitrogenous substances from the urine. That sodium chlorid is a mercury combining substance, forming mercuric chlorid from the mercuric nitrate, was recognized by Liebig and some of the earlier workers, who made a correction for this in their nitrogen methods. By using mercuric chlorid as the combining mercuric salt, Freund and Fellner obviated the need for such a correction.

Friedländer,[9] in 1921, described a rapid titrimetric method for the determination of urea in urine, in which mercuric chlorid was used. As an end-point he used the first appearance of a "red mercury carbonate" (rotes kohlensäures Quecksilber) which is formed when a drop of the titrated urine is added to a drop of sodium carbonate, thus showing the presence of an excess of mercuric chlorid in the urine. He maintained that the values obtained represent other nitrogenous substances of the urine besides the urea. Uric acid, creatinin and amino-acids all combine with mercury, but are present in the urine in so much smaller quantities, and use so much less mercury proportionately than does urea, that Friedländer believed they did not impair the values of the urea determinations for clinical purposes. We have adopted for our use a modification of this method. A critical study of the details in the development of our technic is described in Part II.

* Work done under the direction of Dr. Leonard G. Rowntree in the Division of Medicine, Mayo Clinic.

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4. Chauffard, A.; Brodin, P., and Grigaut, A.: Diffusibilité dialitique comparée de l'urée du chlorure de sodium de l'acide urique et du glucose, Ann. de méd. **12**: 257-262 (Oct.) 1922.
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7. Pflüger, E.: Ueber die quantitative Bestimmung des Harnstoffs, Arch. f. Physiol. **21**: 248-286, 1880; Ueber die Titration des Harnstoffs mit mercurinitrat nach der Methode von Rautenberg und Th. Pfeiffer, ibid. **40**: 533-586, 1887.
8. Freund, E., and Fellner, R.: Ueber Bestimmung der stickstoffhaltigen Urinbestandtheile mit Sublimat, Ztschr. f. physiol. Chem. (Hoppe-Seyler's) **36**: 401-406, 1902.
9. Friedländer, E.: Titration des Harnstoffes im Urin für klinische Zwecke, München. med. Wchnschr. **68**: 1225-1226 (Sept. 23) 1921.

TECHNIC

Collection of Specimen of Saliva.—The mouth is washed out with one-half glass of water, and a small piece of paraffin is used to stimulate the salivary flow. Two specimens of about 8 c.c. each are collected.

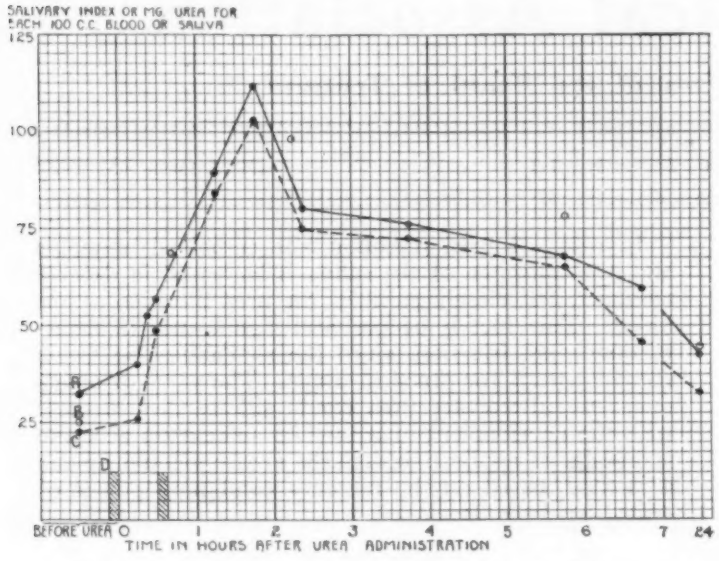

Chart 1.—Parallel changes in blood and saliva of a normal person following administration of 50 gm. of urea by stomach tube: solid line, salivary urea index; *O*, blood urea; broken line, salivary urea (urease method); shaded columns, 25 gm. urea.

The first or preliminary specimen, which removes food particles or excess of epithelial débris, is discarded, or may be used as a check on the second specimen, which is used for titration. Filtration of saliva is unnecessary.

Mercury Titration.—Two solutions are used, a 5 per cent. solution of mercuric chlorid, and a 7 per cent. (saturated) solution of sodium carbonate (anhydrous). This latter is approximately equivalent to a 20 per cent. solution of sodium carbonate crystalline (Na_2CO_3 $10H_2O$), or 8.5 per cent. of monhydrated sodium carbonate U. S. P. To 5 c.c. of saliva in a small flask or tube is added the mercuric chlorid solution from a buret, until a test drop of the titrated saliva, when added to a drop of the sodium carbonate on a white tile, shows a prompt formation (within three seconds) of a definite brown precipitate of a mercury oxychlorid, which is formed by the combination of mercuric chlorid and excess sodium carbonate.[10] It was found that 5 c.c. of saliva requires a minimum of 1.5 c.c. of mercuric chlorid. Hence this amount should be added before a test drop is removed. As titration progresses, a deepening canary yellow color appears on adding test drop to the sodium carbonate; but the true end-point is the first appearance of a reddish brown precipitate.

This titration measures the total mercury combining power of the saliva. The appearance of the oxychlorid shows that the mercuric chlorid has ceased to combine with substances in the saliva and is free to react with the carbonate. The titration figure for 5 c.c. of saliva, multiplied by 20, gives the number of cubic centimeters of mercuric chlorid used for 100 c.c. of saliva. The mercury combining power of 100 c.c. of saliva we have called the "salivary urea index."

DETERMINATION OF NORMAL SALIVARY UREA INDEX

Fifty grams of urea was given to one of us (P. S. H.) by stomach tube to avoid contamination of the saliva, and a temporary urea accumulation in the blood was thus produced. The salivary urea, calculated from the ammonia and urea nitrogen, the blood urea by the urease method, and the salivary urea index were determined at intervals (Chart 1).

There was a distinct and continuous parallelism of the three values, as the urea increased and decreased in the blood. The salivary urea index varied directly with changes in the concentration of urea in saliva and blood. Obviously, the information gained from one estimation was of similar value to that obtained from the other two.

Subsequently, about 900 estimations of the salivary urea index were made in a series of about 600 persons, to determine (1) the variations in the salivary urea index in normal persons, and (2) the variations in the salivary urea index in patients in whom urea retention was evidenced by an increased blood urea.

The normal salivary urea index was determined from saliva collected from 442 persons whose renal function was considered normal. They included eighteen laboratory workers, 337 patients whose blood urea was obtained and found to be between 12 and 40 mg. for each 100 c.c., and eighty-seven patients whose blood urea was not obtained, but who had normal phenolsulphonephthalein excretion, normal urinalysis, and no subjective nor objective evidence of renal damage with retention. Six hundred and sixty-seven titrations of the salivary urea index were made on this group. At the onset of the work a single specimen of saliva was taken. Eighty-two per cent. gave an index value of from 30 to 50 (that is from 30 to 50 c.c. of 5 per cent. mercuric chlorid for each 100 c.c. saliva),

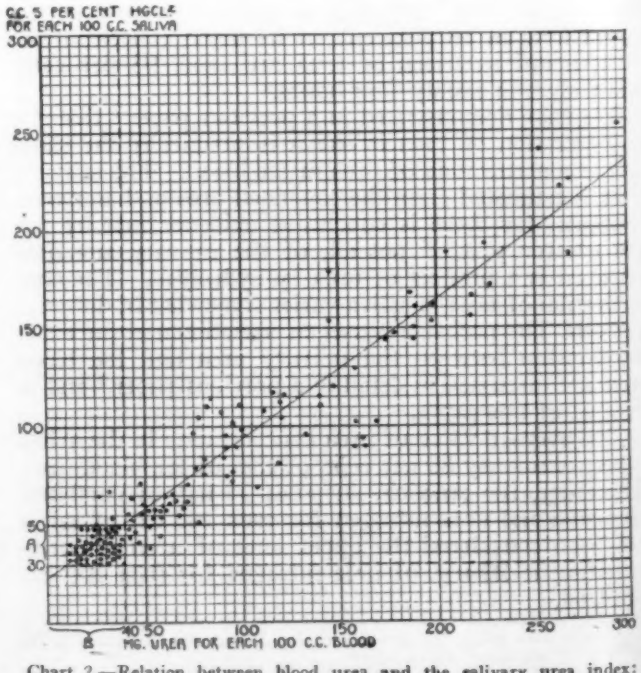

Chart 2.—Relation between blood urea and the salivary urea index: ordinate, salivary urea index; abscissa, blood urea. *A*, normal range of the salivary urea index; *B*, the normal range of blood urea.

while 18 per cent. crept above the value of 50 to values which later were proved to be generally an indication of beginning retention. This overlapping area was materially reduced by using the second specimen of a fractionated salivary collection, as described in discussing

10. Schmidt, E.: Ausführliches Lehrbuch der pharmazeutischen Chemie, Ed. 6, Braunschweig, F. Vieweg, 1919, p. 748.

the technic. Thus, 92 per cent. of 190 estimations made on the second specimen of fractionated salivary collections gave an index between 30 and 50. This explains the necessity for making fractional collections.

Most of these estimations were made on ambulatory patients at the Mayo Clinic, who were sent for salivary analyses immediately after their blood was collected. The routine fractional method for salivary collection was used, and no special attention was given to persons whose mouths were in bad condition. It is probable that the 8 per cent. overlapping group might have been still further reduced if checks had been available in some of these instances in which the index value was disproportionate to the blood urea.

SALIVARY UREA INDEX IN PERSONS WITH UREA RETENTION

Several cases of prolonged retention were studied over long periods of time.[11] In the following cases the changes in the salivary urea index and the fluctuations in the blood urea were most strikingly parallel. Their histories are given in brief detail in order to emphasize the clinical applicability of the test.

TABLE 1.—*Laboratory Data in Case 1*

Date	Salivary Urea Index	Blood Urea, Mg. for Each 100 C.c.	Phenolsulphonephthalein, per Cent.
1/20/23	..	..	35
1/26/23	..	21	..
2/15/23	224	..	..
2/17/23	..	266	..
2/19/23	73	96	..
2/22/23	36	42	..

TABLE 2.—*Laboratory Data in Case 2*

Date	Salivary Urea Index	Blood Urea, Mg. for Each 100 C.c.	Phenolsulphonephthalein, per Cent.
12/13/22	192	226	..
12/14/22	..	..	No return
12/16/22 to 2/17/23	..	..	5-10-15
2/18/23	90	100	10
2/20/23	108	112	..
2/24/23	90	96	..
2/27/23	78	80	..
3/ 2/23	..	..	15
3/ 3/23	72	64	..
5/ 7/23	66	66	..
3/ 9/23	60	56	..
3/10/23	54	..	..
5/16/23	57	52	15
3/20/23	66	60	..
3/23/23	60	62	..
3/27/23	60	68	..
3/30/23	66	60	..

TABLE 3.—*Laboratory Data in Case 3*

Date	Salivary Urea Index	Salivary Urea, Mg. for Each 100 C.c.	Blood Urea, Mg. for Each 100 C.c.	Phenolsulphonephthalein, per Cent.
1/ 8/23	240	306	252	..
1/12/23	168	231	187	..
1/15/23	108	108	...	..
1/16/23	..	...	...	30
1/17/23	102	98	96	..
1/22/23	45	30	29	..
1/24/23	..	...	...	50
1/29/23	40	24	20	..

CASE 1.—Mr. L. A. Van H. came to the clinic, Jan. 3, 1923, complaining of backache and hematuria. Examination of the urine revealed albumin 2, erythrocytes 1 and pus 1, and was negative for tuberculosis bacilli. A diagnosis of left hypernephroma was made, and left nephrectomy was performed, February 6. Acute postoperative uremia occurred.

11. These cases were reported briefly by Hench, P. S.: Salivary Urea and the Mercury Combining Power of Saliva: A New and Simple Index of Renal Insufficiency, M. Clin. N. Am. **7**: 123-134 (July) 1923.

CASE 2.—Mr. P. O. came to the clinic, Dec. 9, 1922, complaining of acute and chronic retention. This patient was observed over a considerable period of time. The bladder was gradually decompressed. A diagnosis of hypertrophied prostate 2 with uremia was made.

CASE 3.—Mr. B. D. came to the clinic, Dec. 26, 1922, complaining of bladder trouble. Examination of the urine revealed pus 3, erythrocytes 1, and positive stain for tubercle bacilli. The phenolsulphonephthalein return was 50 per cent. Pyelographic and cystoscopic examinations confirmed the diagnosis of renal tuberculosis, and right nephrectomy was performed, December 30. Acute retention ensued.

TABLE 4.—*Laboratory Data in Case 4*

Date	Salivary Urea Index	Salivary Urea, Mg. for Each 100 C.c.	Temperature	Pulse
4/ 8/23	54	..	Normal	Normal
4/10/23	..	..	103	135
4/11/23	..	..	103	130
4/12/23	71	70 5	99.5 to 102.5	112 to 102
4/14/23	..	..	Normal	Normal
4/17/23	54	..	...	...
4/19/23	32	34	...	...

TABLE 5.—*Probable Equivalents in Blood Urea, Derived from Salivary Urea Index*

Titration Figure, C.c. 5 per Cent. Mercuric Chlorid for 5 C.c. Saliva	Salivary Urea Index	Probable Equivalent in Blood Urea, Mg. for Each 100 C.c.
1.5	30	10
2.0	40	24
2.5	50	40
3.0	60	53
3.5	70	67
4.0	80	81
4.5	90	95
5.0	100	109
5.5	110	124
6.0	120	138
6.5	130	152
7.0	140	166
7.5	150	180
8.0	160	195
8.5	170	209
9.0	180	223
9.5	190	237
10.0	200	250
10.5	210	265
11.0	220	279
11.5	230	294
12.0	240	307

CASE 4.—Mrs. H. C. came to the clinic, Jan. 1, 1923, and a diagnosis of bilateral pyelonephritis was made. Examination of the urine revealed pus 3 and 4, albumin 2, and erythrocytes 1. The blood urea was 20 mg. The temperature and pulse rate were normal. The patient was dismissed from observation, but returned to the clinic, March 23. At this time blood urea could not be obtained. The salivary urea index was determined, April 8. Two days later the patient developed high temperature and rapid pulse rate, with headache and nausea. This case illustrates the possibility of studying urea retention when blood urea estimations are impossible.

COMPARISONS BETWEEN THE SALIVARY UREA INDEX AND BLOOD UREA

Seven hundred and four determinations of blood urea and the salivary urea index were made on 493 persons. The two tests were usually taken within an hour, and never more than a few hours apart. The urea levels, as indicated by the blood urea, were between 12 and 300 mg. The results of the tests on all patients with a blood urea value of 70 mg. or over are charted. Below this value a representative series is shown. It will be seen that the salivary urea index increased directly with the degree of urea retention as indicated by the blood urea (Chart 2).

In order to determine the clinical significance of single index estimations in terms of blood urea, and to ascertain the most probable relationship between

the two values in the entire series, a "line of probability" was arbitrarily drawn and is shown in Chart 3. From this chart the probable equivalents may be found. A table (Table 5) of these probable equivalents is also given, which merely expresses in another way the values as shown in Chart 3.

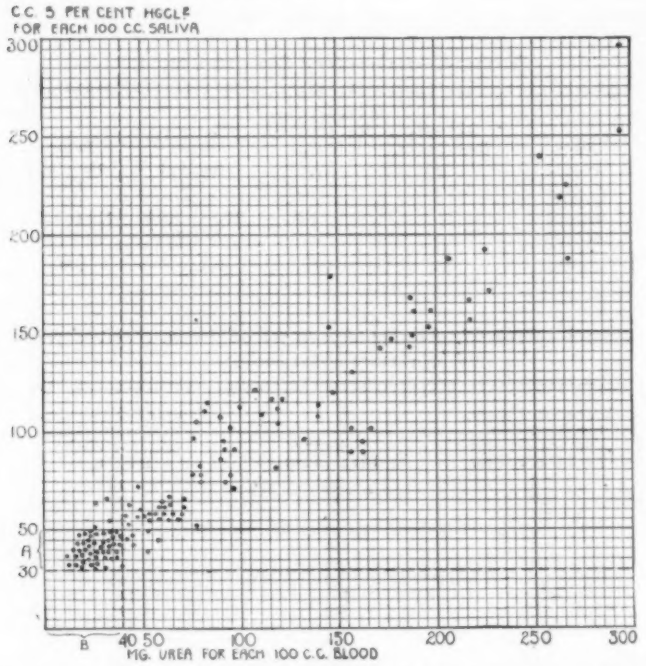

Chart 3.—Relation between blood urea and the salivary urea index: ordinate, salivary urea index; abscissa, blood urea. The line indicates the probable blood and saliva equivalents throughout the range of values of the chart. *A*, normal range of the salivary urea index; *B*, the normal range of blood urea.

By the application of the mathematical formula for the analytic expression of a straight line ($y = mx + b$), a formula for the estimation of the probable equivalents is obtained: $S = mB + b$, in which S = salivary urea index, B = blood urea, m = the value for the slant of the line, b = the particular constant obtained from the figure used; or, $B = 1.43 \times S - 34$, in which B = blood urea, and S = the salivary urea index.

Thus, without consulting Chart 3 or Table 5, the probable equivalent of any salivary urea index may be obtained in terms of blood urea. For example, if the salivary urea index is 100, $B = 1.43 \times 100 - 34$, the probable blood urea = 109 mg. for each 100 c.c.

COMMENT

In a large series of cases, variations may be expected, and the scattering of dots in Charts 2 and 3 denotes the variations in our series. Some of these variations are undoubtedly due to the fact that the values represent analyses made in cases in which only a single specimen of saliva was obtained; others may be due to individual variations in the relation between the concentration of urea in the blood and the saliva. This relation is discussed in detail in Part II. Chart 3 shows the probable equivalents of the two values, as well as the observed variations in them. In about 8 per cent. of the determinations of the fractional series, the salivary urea index indicated a mild retention in cases in which the blood urea was within normal limits. In about the same percentage (all determinations) the salivary urea index did not indicate a retention in cases in which the urea of the blood was slightly increased. No index value below 50 was obtained in the presence of a blood urea of 60 mg. or more. With a normal blood urea the salivary urea index never indicated a retention of more than 60 mg.

It will be observed that in the normal range of blood urea values, from 12 to 40 mg. for each 100 c.c., the salivary urea index varies somewhat indiscriminately between 30 and 50; but with a blood urea value above 40 mg. for each 100 c.c., the variability is less significant. With urea retention, the other retained substances, uric acid, creatinin, amino-nitrogen, and so forth, which are included in the mercury titration, increase very slightly, or not at all, as compared with the rise in urea itself. Although we do not claim that the salivary urea index gives accurate figures for the blood urea in each case, the parallelism between blood urea and the salivary urea index is sufficiently established, and therefore a high salivary urea index can be accepted by itself as indication of nitrogen or urea retention.

The method may be used as an office test for detecting cases of retention. It is advocated for hospital practice as a routine before blood urea estimations are made. High indexes definitely denote retention; borderline index values indicate the need of blood studies. Cases may also be followed daily, with occasional blood urea checks, and the discomforts and inconvenience of unnecessary venipunctures avoided.

CONCLUSIONS

1. The mercury combining power of saliva was determined in 888 instances on 598 persons in an effort to ascertain its significance in regard to renal functional capacity. A salivary urea index of renal function has been evolved.[12]

2. The salivary urea index denotes the number of cubic centimeters of a 5 per cent. solution of mercuric chlorid used for each 100 c.c. of saliva. In 92 per cent. of estimations on 190 normal persons, the salivary urea index was between 30 and 50.

3. The salivary urea index increases in definite parallelism with urea retention, as evidenced by the blood urea.

4. The probable relationship between the salivary urea index and the blood urea may be expressed by a formula which is given to assist in the clinical interpretation of the salivary urea index; but it is sufficient to know that high salivary urea indexes denote definite renal insufficiency.

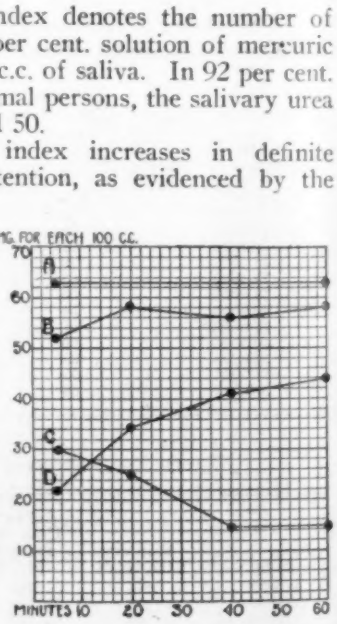

Chart 4.—Constancy of the combined urea and ammonia nitrogen of the saliva, and variations in its components during salivation for a period of one hour, in a case of urea retention: *A*, blood urea nitrogen; *B*, salivary combined urea and ammonia nitrogen; *C*, salivary ammonia nitrogen; *D*, salivary urea nitrogen.

5. The results of this series indicate that, when a salivary urea index below 50 is obtained, there is, in nearly 90 per cent. of the cases, no urea retention in the body. There is a 10 per cent. possibility that mild retention exists, but not in any case does it exceed the blood urea value of 60 mg. When a salivary urea index above 50 is obtained, there

12. Although no special laboratory accessories are needed, a simple compact apparatus in a small portable container has been designed, and may be obtained from Hynson, Wescott and Dunning Company, Baltimore.

is in 91 per cent. of cases definite urea retention, and only a 9 per cent. possibility that there is no retention.

6. The estimation of the salivary urea index is advocated as a substitute for certain blood urea determinations. In doubtful cases it may be controlled by the blood urea.

II. A DISCUSSION OF SALIVARY UREA AND THE MERCURY COMBINING POWER OF SALIVA

By Martha Aldrich, A.B., and Philip S. Hench, M.D.

Urea is present in saliva as in all other body fluids. We have shown that when urea retention occurs, throughout the body, the combined ammonia and urea nitrogen of the saliva is increased proportionately to the increase in blood urea nitrogen.[5] These findings have since been corroborated by Schmitz[13] and Landsberg.[14] The latter, however, dismisses as of "no importance for practical purposes" the varying amounts of ammonia found in the saliva. We have frequently found ammonia present in large amounts with only small amounts of urea, and wish to emphasize again that it is only by considering this ammonia as derived from urea by hydrolysis that a true estimation of the urea content of the saliva may be obtained. Chart 4 illustrates this point.

In four specimens collected over a period of one hour from a patient with urea retention, the salivary combined urea and ammonia nitrogen remained practically constant, whereas the high value of the ammonia nitrogen in the first specimen decreased markedly throughout the hour, the urea nitrogen varying universely with the ammonia.

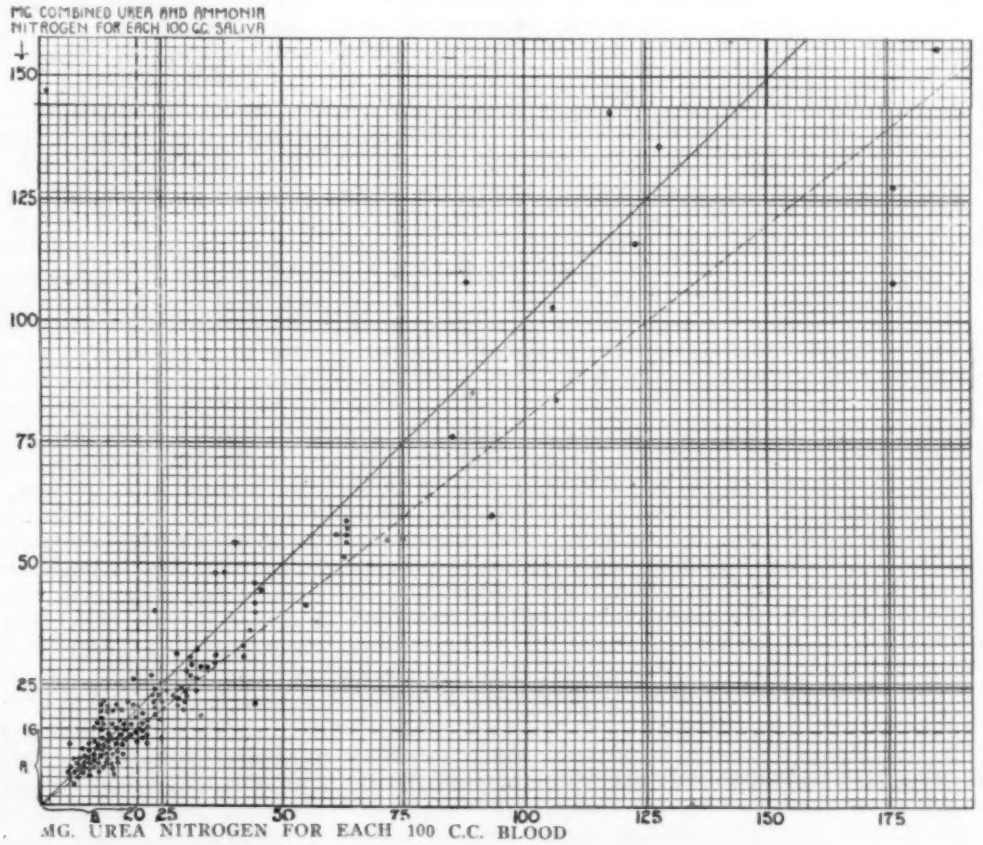

Chart 5.—Relation between blood urea nitrogen and salivary urea and ammonia nitrogen: solid line, the line on which points would fall if the blood urea and salivary urea values were equal; broken line, line on which points would fall if the salivary urea values were 80 per cent. of the blood values.

The relation of the combined ammonia and urea nitrogen of the saliva to the urea nitrogen of the blood in a series of 165 cases is shown in Chart 5. In about 50 per cent. of the cases, the salivary values lie between 80 and 100 per cent. of the blood values; 25 per cent. are higher than the blood values, and 25 per cent. below 80 per cent. of the blood values. These variations between the relative concentration of urea in the blood and saliva may be caused by various conditions:

1. Cases have been observed in which the salivary urea values were higher than those of the blood, owing to the fact that the specimen, although the mouth was rinsed, contained ammonia from sources other than the salivary secretion, such as from decomposed food. More carefully collected specimens from the same persons showed a concentration of urea proportionate to the blood.

2. Apparent variations have occurred in cases in which there have been very rapidly occurring changes in the blood urea, such as often follow operation. Unless blood and saliva estimations are made simultaneously, the relative urea concentrations are not absolutely comparable.

3. It is also apparent that any condition which may cause a change in the permeability of the tissues, with a resultant change in the diffusion rate of urea, may also cause variations between the salivary and blood urea content. Although variations do occur in the relative concentration of urea in saliva and blood, we have demonstrated in Chart 2 that these variations do not impair the clinical value of the salivary urea index, and hence of the salivary urea, in more than 8 per cent. of the cases within a certain range.

In an effort to obtain a simple way of estimating the salivary urea, various methods were tried. The hypobromite method was employed with some success. The use of permutit (an "aluminum silicate" with high adsorptive powers) to determine both the ammonia already formed in the saliva and that obtained by hydrolysis of the urea by urease was theoretically attractive. Since it was difficult to secure perfectly clear solutions on nesslerization, we concluded that such a method could not be generally utilized, although we have recently observed that Stitt[15] advocates this principle as practicable. Schmitz has described a

13. Schmitz, H. W.: Comparative Concentration of Urea in the Blood and Saliva in a Series of Pathologic Cases, J. Lab. & Clin. Med. 8: 78-82 (Nov.) 1922.

14. Landsberg, M.: Ueber dem Harnstoffgehalt im Speichel, Klin. Wchnschr. 2: 306 (Feb. 12) 1923.

15. Stitt, E. R.: Practical Bacteriology, Blood Work and Animal Parasitology, Including Bacteriological Keys, Zoological Tables, and Explanatory Clinical Notes, Ed. 6, Philadelphia, P. Blakiston's Son & Company, 1918, p. 633.

simple method[16] for determining salivary urea, which, however, requires considerable time and laboratory facilities. The determination of the mercury combining power of the saliva by a modification of the Friedländer method for determining urea in urine, which we have adopted, is both rapidly and easily accomplished.

In a study of the principle of this method, determinations were made on solutions of ammonium salts and urea: ammonium chlorid, ammonium sulphate, diammonium phosphate and urea were used. By the same technic as is employed for the saliva titration, with particular attention to the timing of the appearance of the end-point, it was shown that the mercury combining power for each milligram of nitrogen was the same, within the limits of error of the method, for urea and all ammonium salts tested. The results are tabulated in Table 6.

TABLE 6.—*Mercury Combining Power of Urea and Some Ammonium Salts*

Nitrogen, Mg. 5 C.c. Volume	In Mercuric Chlorid, C.c. for 5 C.c. Solution of			
	Ammonium Sulphate	Ammonium Chlorid	Diammonium Phosphate	Urea
0.2	0.8	0.75	0.83	0.80
0.3	0.97	....	....	1.05
0.4	1.07	1.05	1.09	1.07
0.5	1.32	1.35	1.26	1.4
0.6	1.45	....	....	....
0.8	1.6	....	....	1.65
1.0	1.92	1.8	1.85	2.1
2.0	3.3	2.96	3.13	3.28
3.0	4.27	4.1	4.2	4.25
4.0	5.6	5.27	5.5	5.41
5.0	6.5	6.15	6.15	6.48
6.0	....	7.65	7.2	7.55
8.0	....	9.75	9.95	9.65
10.0	....	11.8	11.45	11.55

It is evident that variations in the ammonia urea ratio of the saliva, which often occur, have no effect on the mercury combining power of the saliva (Table 6). Moreover, the mercury combining power of the saliva is not in simple proportion to the salivary urea; for, although 1 mg. of nitrogen in a standard solution utilizes approximately 2 c.c. of a 5 per cent. solution of mercuric chlorid, 4 mg. of nitrogen does not utilize 8 c.c., but approximately 5.5 c.c. This in no way impairs the clinical value of the test discussed in Part I.

By the use of the same solution of salts, since two were acid, one alkaline and one neutral to methyl red, it was determined that over a range of hydrogen-ion concentration far exceeding that encountered in saliva specimens,[17] the mercury titration figure is the same for each milligram of nitrogen for the ammonium salts tested, and for urea. Ammonium sulphate and urea solutions in a phosphate buffer solution with a hydrogen-ion concentration of about 7.0 gave the same results as are obtained in aqueous solutions.

In the alkaline phosphate solution, a white amorphous precipitate was formed on the addition of mercuric chlorid to the solution. This precipitate did not occur in the acid solution of ammonium sulphate, ammonium chlorid, or in the neutral solution of urea, but the mercury added to the solutions was nevertheless bound in a compound, since there was no immediate formation of a mercury oxychlorid when a drop of the titrated mixture was added to sodium carbonate. Instead of this, a white precipitate was formed with the sodium carbonate, resembling the white precipitate of the alkaline phosphate solution. When the ammonium chlorid solution was cautiously neutralized with sodium hydroxid to a hydrogen-ion concentration of about 7.0, the same white precipitate occurred on addition of mercuric chlorid as in the phosphate solution. As would be expected from the reaction of saliva, a white precipitate occurs on addition of mercuric chlorid.

Liebig's analyses of the various precipitates formed with urea and some mercury salts showed them to be complex substances, composed of the urea and the mercuric oxid; the proportion of the latter in the molecule varied according to the conditions under which the precipitation was made.[6] The precipitate that we obtained was not analyzed.

The mercury combining power of glycin in a phosphate buffer solution was tested and found to be greater for each milligram of nitrogen than that of the ammonia salts: 0.4 mg. of nitrogen utilizing 2.3 c.c. of a 5 per cent. solution of mercuric chlorid; 0.6 mg., 2.9 c.c.; and 1.0 mg., 4.25 c.c.

Besides the ammonia and the urea, some of the substances that occur in the saliva and combine with mercuric chlorid are the amino-acids, creatinin, uric acid, mucin, and in certain cases, albumin. Morris and Jersey[18] have proved that the urea and ammonia content of the saliva is affected only slightly by the stimulation of the glands by paraffin, but that the amounts of the other substances vary greatly. We have not determined the mercury combining power of substances other than urea separately. However, by means of a curve, based on Table 6, we have determined the proportion of mercuric chlorid used in combining with substances of the saliva other than urea and ammonia nitrogen.

In forty cases with normal mercury combining power and normal salivary urea, the proportion of mercuric chlorid used for substances other than the urea and ammonia nitrogen averaged 39 per cent.; in twenty-two cases with urea retention, the proportion of mercuric chlorid for substances other than ammonia and urea nitrogen averaged 35 per cent. This approximate constancy of proportion between the urea and the other mercuric combining substances of the saliva in normal persons, and in persons with retention, may be explained by any one of several interesting conjectures. It offers a distinct contrast to conditions in the blood in which the urea percentage of the total nonprotein nitrogen increases greatly in cases of retention.

Although routinely mixed saliva has been used, it is interesting to note that the mercury combining power of a specimen of pure sublingual saliva was the same as that of mixed saliva from the same individual.

Besides the specific substances of glandular secretions, and the blood extractives, all specimens of saliva contain oral and lingual epithelium, secretions from the mouth, occasional bits of food, and many bacteria. The presence of ammonia-forming bacteria in the saliva makes it necessary either to work on fresh specimens, or to prevent decomposition by killing the bacteria. In warm weather, particularly, bacterial decomposition will change the mercury combining power of the saliva in a few hours. Mucin, on standing, also liberates ammonia. Formaldehyd (2 drops of 10 per cent.) was used as a preservative with some success, but it is more satisfactory simply to bring the saliva to the boiling point. This kills the bacteria and any enzymes present, and the mercury combining power will remain unchanged for several days. One specimen, which was

16. Schmitz, H. W.: A Simple Method of Estimating the Salivary Urea, J. Biol. Chem. **55**: 1923; Proc. Am. Soc. Biol. Chem., **43-44**.

17. McClelland, J. R.: The Influence of Various Stimuli on Human Saliva, Am. J. Physiol. **63**: 127-141 (Dec.) 1922. Starr, H. E.: Variations in the Hydrogen Ion Concentration of Human Mixed Saliva, J. Biol. Chem. **54**: 55-64 (Sept.) 1922.

18. Morris, J. L., and Jersey, V.: Chemical Constituents of Saliva as Indices of Glandular Activity, J. Biol. Chem. **56**: 31-42, 1923.

boiled for ten seconds in a test tube, and kept stoppered and sterile, showed no change in two weeks' time in its mercury combining power. The boiling might be expected to drive off ammonia, but determinations of both salivary urea and mercury combining power show that boiling for ten seconds makes no change in the initial ammonia value.

Our technic of collection is also developed to prevent the danger of contaminating substances from decomposed food. The collection of fractional specimens, as described in Part I, has reduced the disproportionate results obtained from the presence of such substances from 18 to 8 per cent.

The amount of sediment in the second specimen is generally less than in the first, as is evident in gross examination. This sediment settles so rapidly that in most cases the supernatant fluid can be easily obtained. To determine whether or not it is necessary to filter or centrifuge specimens, a few experiments were made on specimens containing sediment, and were repeated when the sediment had been removed, and on the sediment itself suspended in water. It was found that while mercury is utilized in combining with the sediment of the saliva, this sediment (except when present in abnormal amounts), displaces approximately its equivalent in mercury combining power in the volume of saliva taken for estimation. Filtration, therefore, is not necessary, although the use of clear supernatant fluid is preferable to a specimen in which the sediment has not settled.

INFLUENCE OF ULTRAVIOLET IRRADIATION ON CALCIUM CONTENT OF BLOOD SERUM

IN HAY-FEVER, HYPERESTHETIC RHINITIS AND THE ASTHMAS: PRELIMINARY REPORT

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I. A STUDY OF THE CALCIUM CONTENT OF HUMAN BLOOD SERUM IN HAY-FEVER, HYPERESTHETIC RHINITIS AND THE ASTHMAS

In 1917, Halverson, Mohler and Bergeim[1] of Philadelphia presented data with regard to the calcium content of the blood in a variety of pathologic conditions. While a rather wide field had been covered, no mention was made of hay-fever, hyperesthetic rhinitis, (vasomotor rhinitis) or the asthmas. This was probably due to the fact that these diseases were accepted as belonging to an entirely different field, and no possible relationship was suggested between them and the calcium deficiency of the blood. A thorough review of the literature gives one no added information regarding these conditions. This study was therefore undertaken to determine what relationship existed, if any, between hay-fever and hyperesthetic rhinitis and an ionic calcium deficiency of the human blood serum.

Determination of Calcium in Blood Serum.—The problem of measuring the calcium content of blood serum was not a difficult one, as much work has been done along these lines. Halverson and Bergeim,[2] in 1917, showed how the calcium could be determined in small amounts of blood and in other biologic materials low in this element. According to these investigators, three main problems must be solved in this connection: "The first is the preparation of a solution containing all of the calcium but free from interfering organic matter. The second is the precipitation of the calcium in the presence of such other elements as commonly occur, while the third consists in the accurate estimation of the precipitated calcium."

While many methods are known, these authors suggested the precipitation of calcium as oxalate directly in the filtrate from biologic fluids after removal of protein, the final estimation being carried out by a refinement of the permanganate titration method. We have accepted this plan in our determinations. It apparently affords not only accurate computations, but also the simplest procedure for obtaining them, particularly when one considers the many complicated procedures mentioned in the literature.

More recently certain investigators have suggested other ways of determining calcium in small amounts of blood serum. Kramer and Tisdall[3] in 1921, published two reports, the more interesting of which from the standpoint of the clinician is the first one,[4] which speaks of a clinical method for quantitative determination of calcium not only in small amounts of serum, but also in plasma. As can readily be understood, these determinations may serve as a valuable help to the clinician. However, the computations cannot be relied on as being as accurate as those obtained by laboratory technic.

It has been argued that determinations on plasma would be preferable to those on serum on account of the changes in plasma values in many pathologic conditions. While this contention is no doubt correct, it has been found that changes in plasma values are closely reflected in serum values, even in uremia,[1] in which the calcium content of the blood is most markedly altered. This work was part of the study of Halverson, Mohler and Bergeim of Philadelphia, and has been accepted by most students of this problem. Blood serum has therefore been employed as a matter of convenience. In this connection, it is pointed out that calcium determinations on whole blood are of little value unless the relative volume of corpuscles and plasma is known. As this plan is not only more complicated, but unpractical, it has not been considered at all.

It must be remembered, further, that calcium is present in the blood in two forms, ionized and combined. When coagulation of the blood occurs, the calcium in the exuded serum is found to be all in the ionized form. What the normal amount present is, varies only slightly. Groves and Vines, British writers, accept the figure of 10.5 mg. of calcium per cent., while Halverson, Mohler and Bergeim accept 10.2 as the standard. The work of the latter is based on a study of the calcium content of human serum in a variety of conditions. For normal men, percentage values from 9.6 to 10.8 with an average of 10.2 were obtained. That these values are characteristic is supported by the finding of similar values in the great majority of pathologic

1. Halverson, J. O.; Mohler, H. K., and Bergeim, Olaf: The Calcium Content of the Blood Serum in Certain Pathologic Conditions, J. Biol. Chem. **32**: 171 (Nov.) 1917.

2. Halverson, J. O., and Bergeim, Olaf: The Determination of Small Amounts of Calcium, Particularly in Blood, J. Biol. Chem. **32**: 159 (Nov.) 1917.

3. Kramer, Benjamin, and Tisdall, F. F.: Determination of Calcium and Magnesium in Small Amounts of Serum: A Simple Technic, J. Biol. Chem. **47**: 475 (Aug.) 1921.

4. Kramer, Benjamin, and Tisdall, F. F.: Clinical Method for Quantitative Determination of Calcium and Magnesium in Small Amounts of Serum or Plasma, Bull. Johns Hopkins Hosp. **32**: 44 (Feb.) 1921.

cases not known to be associated with disturbances in calcium metabolism.

Leicher [5] recently reported on the decrease of blood calcium in otosclerosis. He says that in considering the possibility of successfully treating blood calcium deficit, a distinction must be made between patients in whom only the total calcium (or combined calcium) of the serum is decreased, and those with the positive signs of deficit in ionized calcium. The latter can be influenced by treatment easily, the former only with difficulty.

Ionic Calcium Content of Blood Serum in Hay-Fever, Hyperesthetic Rhinitis and Asthma.—The present report is not based on selected cases. It represents a series which one meets in office and clinical practice, and includes the complaints of the conditions commonly known as hyperesthetic rhinitis, or vasomotor rhinitis, hay-fever and certain types of bronchial asthma. In each instance, before any laboratory tests were made, the clinical diagnosis was confirmed. The attacks of hyperesthetic rhinitis are characterized by paroxysms of sneezing, which have been referred to as the machine gun sneeze. The patient sneezes from a half dozen to fifty times in one paroxysm. This is followed by a profuse, thin watery, serous, irritating discharge from the nose. The conjunctivae become more or less suffused and hyperemic.

On examination of the nose between attacks, it appears practically normal except for the pallor of the mucosa. During the attack and for a variable length of time afterward, the turbinates and the mucous membrane lining the septum are water-logged. The tissues are pale, soft and swollen. The thin, serous discharge gives them a shiny appearance.

The ionic calcium content of the blood serum was measured in each patient according to the method already described. The lowest figure obtained in hyperesthetic rhinitis is 6.76, and the highest, 9.8 mg. per cent. (Other figures are given in the accompanying table.)

While the calcium content of the serum is invariably low in hyperesthetic rhinitis, it is not always so in all cases of hay-fever and asthma. In the two latter diseases, many blood specimens yielded a normal calcium figure and some even gave results in excess of the standard. This group does not belong to the classification of cases included in the scope of this paper. It is more than likely that in instances in which the calcium is normal or very close to the standard, the etiology is some factor other than a calcium deficiency.

II. EFFECT OF CALCIUM, THYROID AND COMBINED CALCIUM-THYROID THERAPY IN HAY-FEVER, HYPERESTHETIC RHINITIS, AND ASTHMAS

The Empiric Use of Calcium in Asthma.—For some time past, clinicians have employed calcium, chiefly as calcium lactate, in the treatment of hay-fever, and more particularly, asthma. This remedy has been prescribed purely on an empiric basis. Recently, however, the possibility of an associated disturbance of calcium metabolism was thought of. And while very little consideration has been given to this phase in a specific way, several investigators have reported some comprehensive data from which one may conclude definitely that a dysfunction of metabolism exists.

The Basal Metabolism in Hyperesthetic Rhinitis.—Novak,[6] in 1921, measured the basal metabolism in hyperesthetic rhinitis in a series of cases. In a definite number of them he found that the metabolic index was low. These observations were not substantiated by the work of Simpson,[7] who reported that he found only an exceedingly small number of hyperesthetic cases with a low metabolic index.

Parathyroid Studies.—Groves and Vines contend that the parathyroids rather than the thyroid are at fault, and their report deals chiefly with the dysfunction of the former. In certain ulcerative conditions it was found that there occurred a deviation from the normal in the calcium content of the serum, some of the calcium being present in the combined form. This abnormality was present in all cases of varicose ulcer; and, in the belief that this might be concerned in maintaining the chronicity of the ulceration, measures were taken to increase the ionic calcium in the serum. Accordingly, calcium was administered by two routes, the intramuscular and the oral. The latter produced no effect at all; the former had a definite influence in promoting the commencement of healing in the ulcers. But the injections alone did not appear to have the power to cause complete healing. It was necessary to give, in addition, small doses of parathyroid substance by mouth. After this additional medication was instituted, complete healing resulted. Further observations demonstrated that the rate of healing was dependent on the rise in the ionic calcium of the blood serum. Groves and Vines concluded that "the toxic substance produced by various pathologic conditions in some way injures the parathyroid glands, and also combines with some of the ionized calcium of the blood. In this way the calcium balance of the blood became disturbed, and the parathyroids were not able to rectify it."

Action of Parathyroid Substance.—In continuing their discussion, the same writers choose to classify the conditions dealt with as "chronic states of a toxic or infective origin." They aim to explain the mode of action of parathyroid substance, "so that the appearance of a claim to its action as a universal panacea may be avoided."

All agree that the mode of action of parathyroid is essentially physiologic, "a more or less specific action on calcium metabolism combined with, or resulting in, a generalized stimulation of metabolism as a whole. It is an aid in the fight against infection of the chronic type, not by its specific action on the infecting organism, but because it places the tissue cells under the most favorable conditions for an adequate resistance."

In accord with these views is the work of Dragstedt,[8] at the University of Chicago, on tetany. He found that completely thyroparathyroidectomized dogs could be kept alive, at least for a year, by diets containing large amounts of lactose. Such a diet undoubtedly produces a complete suppression of bacterial proteolysis in the intestine and the resultant production of intestinal poisons. It was concluded that this tetany [9] is due to an intoxication, and that the responsible toxic substances come chiefly from the gastro-intestinal tract. They are supposed to arise through the activity of the proteolytic group of intestinal bacteria, and are probably for the most part cleavage products of the nature of amins. The function of the parathyroid glands is to prevent intoxication by these poisons.

5. Leicher, Hans: Further Report on the Decrease of Blood Calcium in Otosclerosis and the Possibility of Affecting It by Treatment, Ztschr. f. Hals, Nasen u. Ohrenh. **4**: 74 (Dec. 6) 1922.

6. Novak, F. J., Jr.: Basal Metabolism in Hyperesthetic Rhinitis, Wisconsin M. J. **19**: 534 (March) 1921.

7. Simpson, W. L.: Basal Metabolism in Hyperesthetic Rhinitis, Bronchial Asthma and in Cases in Which the Roentgen Ray or Radium Has Been Applied to the Tonsils, Laryngoscope **32**: 768 (Oct.) 1922.

8. Dragstedt, L. R.: The Pathogenesis of Parathyroid Tetany, Am. J. Physiol. **63**: 408 (Feb.) 1923; The Pathogenesis of Parathyroid Tetany, J. A. M. A. **79**: 1593 (Nov. 4) 1922.

9. Old Theories and New Facts Regarding the Tetany Due to Parathyroidectomy, Editorial, J. A. M. A. **80**: 774 (March 17) 1923.

Luckhardt,[10] a co-worker of Dragstedt, found that completely parathyroidectomized dogs can be kept alive, without showing tetany, on a diet very rich in meat, by means of the oral administration of calcium lactate. After a time this can be stopped entirely without the appearance of tetany. The spontaneous tetany occurring thereafter at irregular intervals, presumably because of constipation or the ingestion of large quantities of unspoiled or small quantities of putrid meat or other spoiled food, can be rapidly controlled by the ingestion of calcium lactate and by the giving of enemas.

Another interesting report comes from Salvesen,[11] of Christiania, who discovered in his experiments in the chemistry of parathyroid insufficiency, the drop in blood calcium, which is more marked the more parathyroid tissue is removed. Suggestion is made that the parathyroids control the calcium metabolism, and by doing so they influence the function not only of the muscle and nerve tissue, but probably of all organs.

Calcium Deficit in Serum in Hay-Fever, Hyperesthetic Rhinitis and Asthma.—With this somewhat differing expression of views in mind, we took up the treatment of hay-fever, hyperesthetic rhinitis and asthma, on the basis of an analogous ionic calcium deficit in the blood serum. After the calcium content of the blood serum was determined and found low, the patients were put on calcium lactate in variable doses of from 5 to 20 grains, from three to four times daily. Observation of these patients showed no definite improvement in the original symptoms. Later the same patients were placed on small doses of thyroid extract, one-fourth grain three times a day, and within four or five days, a complete change had taken place in more than three fourths of them.

While the one-fourth grain of thyroid extract was employed, no doubt similar results could be obtained with smaller doses, as in some instances, this dose was administered after a time only once a day, with a continuation of the general improvement.

It was not, however, until the calcium and thyroid were combined that the therapy showed its true value. Calcium lactate, 5 grains, thyroid extract, one-fourth grain, at first three times daily, and later reduced to twice and even once a day, gave immediate relief within from forty-eight to seventy-two hours. This relief occurred in all cases of hyperesthetic rhinitis and in some cases of hay-fever and asthma; but a sufficient opportunity has not been afforded thus far to try this combined therapy on a large enough number of patients with severe asthma and hay-fever. It should be added that while this therapy was being continued, no local or other form of treatment was being carried out.

The following cases are representative:

CASE 1.—W. F., a woman, aged 23, single, had had hay-fever for the past thirteen years. Various forms of treatment and change of climate gave no relief. Recently she has had typical attacks of asthma in addition to the hay-fever symptoms. Calcium lactate, 10 grains, three times daily, over a period of time gave no relief; thyroid extract, one-half grain, twice daily, gave partial relief; calcium lactate, 10 grains, and thyroid extract, one-fourth grain, gave prompt and complete relief within forty-eight hours. This treatment was continued for eight days, and when discontinued, there was a slight recurrence of the old symptoms. After the combined calcium-thyroid therapy was instituted again, relief was once more obtained. When discontinued, the old symptoms again manifested themselves. The calcium was reduced to 5 grains and the thyroid to one-fourth grain and administered once daily, with complete relief of the symptoms.

CASE 2.—S. E. L., a man, aged 45, married, had severe symptoms of hyperesthetic rhinitis for four years. The course of treatment was carried out as described in Case 1 with results precisely the same.

CASE 3.—A. L. F., a man, aged 52, had hay-fever and asthma for fourteen years. He had previously taken calcium lactate in variable doses, at different times, with no relief. Thyroid extract, one-fourth grain, and calcium lactate, 5 grains, administered twice daily, and, after two weeks, once daily, gave complete relief, with a cessation of violent sneezing and freedom from characteristic asthmatic breathing. (The results obtained in the entire series of cases are given in the accompanying table.)

Calcium Determinations and Results Obtained in a Series of Cases of Hay-Fever, Hyperesthetic Rhinitis, and Asthma with Calcium, Thyroid, Combined Calcium-Thyroid Therapy, and the Ultraviolet Light

	Number of Cases	Lowest Calcium Finding	Highest Calcium Finding	Average for Total Cases	Number of Cases Influenced by Calcium	Number of Cases Influenced by Thyroid	Number of Cases Afforded Relief by Calcium and Thyroid	Cases Which Appear to be Influenced Permanently by Ultra Violet Light
Hyperesthetic rhinitis.....	39	6.76	9.8	8.1*	0	18	39	39
Hay-fever.....	36	8.18	11.2	10.3	0	6	16	16
Bronchial asthma.....	12	8.70	10.5	9.4	0	3	6	6

* Standard, 10.5 mg. per hundred cubic centimeters of blood serum.

The serum calcium in each instance was observed during the treatment. Improvement commences when the amount of ionic calcium in the serum begins to approach the normal figure.

From these results with the single and combined therapy, it is evident that the thyroid extract (or parathyroid) plays an important part in (1) stimulating the calcium metabolism of the body, or in (2) activating the artificial calcium in addition thereto and fixing it so that it is not immediately excreted. It is probable that the former theory is correct, and yet when one observes that prompt relief was obtained in the majority of patients, only after the thyroid extract was combined with the calcium lactate, he is wont to lean somewhat to the latter possibility.

Why is the calcium therapy alone not effective? As noted by Groves and Vines, it is effective when administered alone, but only when given by intramuscular injection. And even in this way, "healing was only partial and temporary until parathyroid substance was added." The fact is that prolonged clinical testing with calcium has not been performed to any great extent. Most of the experimental work has been done in animals and only for a sufficient time to serve its purpose. The observations reported in this paper, based on clinical experimentation, are therefore more or less conclusive. Calcium lactate alone, when given orally, does not influence calcium deficiency. It is probably for this reason that clinicians are disappointed in the use of calcium alone in the so-called asthmatic tendencies.

On the other hand, reports show that thyroid (or parathyroid) is effective in most instances. This is not unusual, since we know the basal metabolism in some of these cases is decreased, and from this standpoint, if

10. Luckhardt, A. B., and Goldberg, Benjamin: Preservation of the Life of Completely Parathyroidectomized Dogs, J. A. M. A. **80**: 79 (Jan. 13) 1923. Luckhardt, A. B., and Rosenbloom, P. J.: The Prevention and Control of Parathyroid Tetany, Proc. Soc. Exper. Biol. & Med. **19**: 129, 1921. Luckhardt and Blumenthal: Science **56**: 257 (Sept.) 1922.
11. Salvesen, H. A.: Studies on the Physiology of the Parathyroid, Proc. Soc. Exper. Biol. & Med. **20**: 204 (Jan. 7) 1923.

from no other, the glandular substance is indicated. Furthermore, the experience of most investigators along these lines is practically the same. The result is that thyroid extract in calcium deficiencies is an accepted form of therapy.

While the combined calcium thyroid treatment has shown its merit, the question of the permanence of results had to be answered. Relief of symptoms was present in many cases while the treatment was in progress, and also during the time the dosage of the drugs was gradually reduced. It seems that the smallest dosage of one-eighth grain of thyroid extract combined with 5 or ten grains of calcium lactate, once daily, is sufficient to afford relief during its continuous administration. But within a very short time after the medication is discontinued, if any of the excitants are present, there is a prompt return of symptoms. It is this phase which led the authors to search still further for a means which would not only stimulate, but permanently fix, the increased ionic calcium in the blood serum.

III. INFLUENCE OF THE MERCURY VAPOR QUARTZ LAMP (ULTRAVIOLET RAY) IN FIXING THE CALCIUM CONTENT OF THE BLOOD SERUM

Treatment of Rickets by the Ultraviolet Ray.—Tisdall [12] recently reported the successful treatment of rickets by exposure to ultraviolet rays from a mercury vapor quartz lamp. While other investigators have reported similar results, according to Tisdall, none have reported any observations on the effect of ultraviolet rays on the calcium and phosphate content of the blood.

Tisdall's experiments included six cases. In all of these the ionic calcium content of the blood was proportionately low and well under the 10.5 mg. per cent. standard. In the majority of these cases a total three hours' exposure to the quartz lamp was necessary. The calcium was increased in each instance and the patients permanently cured. A similar experiment with an ordinary 500 watt incandescent lamp, even with a much longer exposure, proved unsuccessful in increasing the calcium content. These changes were not influenced by diet, as the diets during treatment remained the same as before.

In foreign literature, one reads of the reports of Brasch and Bach, the latter of whom successfully treated rhinitis, and especially hay-fever. No explanation is made, however, in describing their work.

Interesting also is the work of Hess,[13] who attempted to cure a number of rachitic infants by means of rays from the mercury vapor lamp. This author believes that although his results were inconclusive, owing to the lack of roentgenograms, subsequent work by Huldschinsky, who also used this source of radiation, gave evidence of definite healing by means of roentgenograms.

Hess' experiments on rats showed that rickets-producing diets will fail to develop rickets if the rats are exposed to the sun. He found further that artificial light produces the same result, particularly the mercury vapor quartz lamp. "Daily irradiation at a distance of three feet for three minutes is sufficient to protect white rats fed on the standard diet."

The Influence of Ultraviolet Light on Calcium Metabolism.—"There is evidence of metabolic change in the animal body brought about by solar rays in the fact that the inorganic phosphate was brought up to normal by sunlight and also carbon-arc irradiation. A similar effect was had with calcium in the blood. The ultraviolet light seems to be necessary for the normal metabolism of the infant."

Another series of experiments conducted by Kramer, Casparis and Howland [14] conclusively demonstrated that rachitic infants treated by systematic exposure to the rays from the mercury vapor quartz lamp showed healing in every instance, and showed the necessary calcium deposits in the bones.

The investigations of Huldschinsky [15] are even more convincing. His results have far exceeded his expectations, proving that this form of therapy can be considered as a specific method for the treatment of rickets, insuring arrest of the pathologic conditions within a short time.

With this work as a basis for study, we were of the opinion that if the calcium metabolism in rachitis could be so markedly influenced by ultraviolet irradiation, the same good results could be obtained in hay-fever, hyperesthetic rhinitis and the asthmatic tendencies when the calcium content of the blood was lower than normal. Accordingly, those patients who had had a recurrence of symptoms when the calcium and thyroid had been discontinued were exposed to the rays of the mercury vapor quartz lamp.

Method of Use.—The lamp is raised about 1 meter from the patient and fractional body exposures are made, two or three times weekly or oftener. The time of exposure, at first two minutes, is increased at each treatment by from two to three minutes, depending on the tolerance of the individual. At each successive treatment, the distance between patient and lamp is decreased by 3 inches. The smallest distance reached is about 18 inches, while the longest exposure made may reach fifteen minutes, or in exceptional cases, when the tolerance of the individual is great, twenty minutes.

The Ultraviolet Spectrum.—The air cooled lamp used is of the Victor type. The mechanism whereby ultraviolet radiation from this lamp increases the calcium of the blood is not at all understood. The lack of understanding, however, in no way interferes with the clinical usage of the energy for the definite production of the necessary increase. According to Pacini,[16] "the region of the ultraviolet spectrum involved in occasioning the increase is readily fixed; for, as Hess and others have shown, only the ultraviolet fraction of sunlight that remains unfiltered by glass is apparently useful. Sunlight ultraviolet ends at the region of 2,900 Angström units; glass filters at 3,022 Angström units. So that the small region of sunlight ultraviolet included between the limits of 3,022 and 2,900 Angström units is clinically effective in influencing calcium metabolism."

It should be noted that the lamp irradiation is used in conjunction with the drug treatment, for it is with this combined therapy that the most favorable results are obtained.

CONCLUSIONS

1. The ionic calcium content of the blood serum is invariably low in hyperesthetic rhinitis.
2. There are also certain cases of hay-fever and asthma which show a low calcium content.
3. Calcium alone does not influence these conditions.

12. Tisdall, F. F.: The Effects of Ultraviolet Ray on the Calcium and Inorganic Phosphate Content of the Blood Serum of Rachitic Infants, Canadian M. A. J. **12**: 536 (Aug.) 1922.
13. Hess, A. F.: Influence of Light in Prevention and Cure of Rickets, Lancet **2**: 367 (Aug. 19) 1922.
14. Kramer, Benjamin; Casparis, H. R., and Howland, John: Ultraviolet Radiation in Rickets: Effect on Calcium and Inorganic Phosphorus Concentration of Serum, Am. J. Dis. Child. **24**: 20 (July) 1922.
15. Huldschinsky, K.: Die Behandlung der Rachitis durch Ultravioletbestrahlung, Ztschr. f. orthop. Chir. **39**: 426, 1919-1920.
16. Pacini, A. J.: Ultra Violet Radiation in the Treatment of Fractures, Am. Med. **17**: 701 (Dec.) 1922.

4. Calcium lactate combined with thyroid extract affords temporary relief in all cases of hyperesthetic rhinitis and in some cases of hay-fever and bronchial asthma.

5. Exposure to the mercury vapor quartz light, together with the combined calcium-thyroid therapy, appears to fix permanently the ionic calcium content of the blood serum.

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ACIDIFIED WHOLE MILK AS A ROUTINE INFANT FOOD*

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Some young infants may be satisfactorily fed on whole undiluted cow's milk given in the same amounts as human breast milk. The majority, however, when so fed fail to thrive in a normal manner and develop gastro-intestinal and nutritional disturbances. This fact has led to the common practice of feeding infants lesser amounts of cow's milk than of breast milk, and making up the deficiency in calories by the addition of some form of carbohydrate. The total volume of the food is made up by the addition of water. In other words, the milk is diluted and sugar is added.

Various theoretical explanations for the necessity of such modifications of cow's milk have been given. It has been assumed, for example, that the infant is incapable of digesting protein when it occurs in a concentration of 3.5 per cent., as in cow's milk, but can digest it when its concentration amounts to only 1.25 per cent., as it occurs in breast milk and diluted cow's milk. Such an assumption is unsupported by experimental evidence. The fact remains, however, that the infant cannot ordinarily digest as great a total amount of cow's milk as of breast milk, and most systems of modification, in their ultimate analysis, merely accomplish a reduction in the total amount of milk fed and supply the necessary calories in other ways. This is true of the usual whole milk dilutions, "percentage formulas," condensed milk dilutions, Gerstenberger's "S. M. A.," Czerny-Kleinschmidt's "Buttermehlernährung," malted milk, etc.

The methods described have distinct limitations, especially in the case of infants having lowered digestive capacity, as the margin is a narrow one between the infant's ability to utilize cow's milk and the amount of milk required for satisfactory nutrition. Not infrequently the amount of milk needed is more than the amount that may be effectively cared for by the gastro-intestinal tract.

Cow's milk can be rendered more digestible by the addition of acid, and can then be given in considerably larger amounts. In another paper [1] we have pointed out some of the reasons for this fact. We have shown that sweet cow's milk is capable of neutralizing, to a great extent, the acid of the gastric juice, and in this way impairing seriously normal digestive function. Acid milk, on the other hand, does not neutralize the gastric juice, and in this respect behaves more like breast milk. Acid milk, furthermore, is usually free from pathogenic bacteria on account of the inhibiting effect of the acid on bacterial growth. The fineness of the curd has also been assumed to be an added advantage. Other theoretical explanations as to the favorable effect of acid milk have been advanced, such as denaturization of the protein; [1] stimulation of the flow of bile, pancreatic and intestinal secretions; [1] favorable effect on absorption of fat, protein and mineral matter, [2] and stimulation of the muscular construction in the gastro-intestinal tract. [3] It has also been asserted that the live lactic acid organisms present in bacterially soured milk exert a favorable action on gastro-intestinal processes. The somewhat lowered sugar content of the bacterially soured milk has also been believed to be a factor in rendering it more digestible by infants. The latter two considerations are not applicable to milk artificially soured by the addition of acid.

Whatever the explanation accepted, the favorable effects of acid milk cannot be disputed. It has long been known [4] that buttermilk is better tolerated by infants than sweet milk. This fact was empirically discovered. Buttermilk, whether alone or in combination with curds, as in protein milk, is now used as a routine by pediatricians in the treatment of intestinal disturbances of infants, with excellent results.

Some years ago, one of us [5] pointed out the value of whole lactic acid milk as a food for athreptic infants. It was shown that even young or undernourished infants could, to advantage, be fed undiluted bacterially soured whole cow's milk, enriched with considerable amounts of commercial corn syrup. The tolerance for such food was found to be very high. The reasons for this were discussed in the paper mentioned.

Such formulas were used at first only for the feeding of certain athreptic infants who failed to do well on the usual types of food. The use has gradually been extended to other infants as the advantages of this type of food became evident until, at present, approximately 90 per cent. of the infants in the St. Louis Children's Hospital are fed on lactic acid milk and corn syrup formulas. The method of preparation of the whole lactic acid milk has been improved and simplified to such an extent that it can readily be prepared in the home. This has made it possible to use the milk in dispensary and private practice. During the last two years, more than 50 per cent. of the infants attending the feeding clinics of the Washington University Dispensary have been fed on the acid milk formulas, and the results have been such that we feel that a still more general use of this type of food would be advantageous in the feeding of normal as well as of sick infants.

PREPARATION OF FORMULAS

Whole cow's milk, artificially soured by inoculation with lactic acid producing organisms, can be obtained from dairies in most large cities. Such milk is sold under various names ("Bulgarian Milk," "Fermilac," "Lactase"). The product of the better dairies is usually satisfactory for use in the feeding of infants. The cost of whole lactic acid milk, as obtained from the dairies, is usually about 5 cents a quart more than the usual pasteurized milk.

When lactic acid milk is not obtainable from dairies, it must be prepared at home. Two methods are avail-

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1. Marriott, W. M., and Davidson, L. T.: Acidity of the Gastric Contents of Infants, Am. J. Dis. Child. **26**: 542 (Dec.) 1923.

2. Klotz, M.: Milchsaüre und Säuglingsstoffwechsel, Jahrb. f. Kinderh. **70**: 1, 1909-1910.

3. Sherman, D. H., and Lohnes, H. R.: Lactic Acid Milk, Tr. Am. Pediat. Soc. **32**: 245, 1920.

4. Teixeira de Mattos: Jahrb. f. Kinderh. **55**, 1902.

5. Marriott, W. M.: Artificial Feeding of Athreptic Infants, J. A. M. A. **73**: 1173 (Oct. 18) 1919.

able, the souring with lactic acid organisms, or the addition of lactic acid to sterilized milk.

The method of preparing milk in the home by the use of lactic acid cultures was described in the preceding paper [5] and will not be detailed here. The method is not free from difficulties, and a uniform preparation is not regularly obtainable. Furthermore, contaminations of the cultures not infrequently occur.

A better method consists in the addition of lactic acid to sterilized milk. This method can easily be carried out, even by unintelligent mothers, and is, in fact, distinctly more "fool-proof" than the method of preparation of the usual sweet milk formulas.

To prepare acid milk, a good grade of cow's milk is first sterilized by boiling for five minutes. The milk is then cooled and the scum removed. When thoroughly cool, lactic acid is dropped in slowly, while the milk is gently stirred. Lactic acid, U. S. P. (75 to 85 per cent.), is used and the amount required is 1 dram (4 c.c.) to each pint (500 c.c.) of milk. This is added a drop at a time from a medicine dropper. A test tube drawn out to a fine point and graduated in drams or cubic centimeters also provides a satisfactory means of slowly adding a measured amount of acid. If the milk is warm when the acid is added, or if the acid is run in too rapidly, large clumps of curds will separate. When properly prepared, a smooth, homogeneous preparation should result. The concentration of acid is the same as that occurring in ordinary buttermilk. The taste and general physical properties are the same. The cost of lactic acid used in the preparation of a quart of milk is not more than 2 cents, at the present market price of U. S. P. lactic acid (approximately $1 a pound).

The milk prepared as described keeps well, even if not placed in a refrigerator. Its acidity is such (p_H 4) that bacterial growth is almost completely inhibited. We have inoculated such milk with pure cultures of *B. coli* and *B. dysenteriae* and have found no growth at the end of twenty-four hours. Ohta [6] has shown that, when milk of this degree of acidity is contaminated by the addition of mixed stool bacteria of infants, no growth of the organisms occurs.

In using lactic acid milk for infant feeding, dilution is not usually necessary, as the amount an infant would ordinarily take at a feeding is not in excess of the digestive capacity. Only when it is desired to limit distinctly the amount of milk taken, without at the same time decreasing the total fluid intake, as, for example, during warm weather, or in the case of infants convalescing from severe diarrhea, is dilution required. Practical experience has shown that it is neither necessary nor desirable to dilute the milk for the feeding of even newly born or premature infants.

Carbohydrate should be added to lactic acid milk, as the amount of sugar present is insufficient for the needs of the average infant. The carbohydrate of choice is commercial corn syrup, such as is obtainable in grocery stores (Karo, etc.). This syrup contains a relatively high proportion of the difficultly fermentable dextrin,[7] and can consequently be added to the lactic acid milk feedings in large amounts without the danger of producing diarrhea. The characteristics of corn syrup are discussed elsewhere.[5] This form of sugar possesses distinct advantages over sucrose or lactose, and is at least as suitable for infant feeding as the expensive proprietary malt preparations. The amount of syrup usually added to the day's feedings is 1 ounce for infants up to 2 weeks of age, and from 1½ to 2 ounces for the older infants. It is occasionally of advantage to add somewhat larger amounts in the case of infants with high caloric requirements, especially those who are undernourished. Some infants are able to take a surprising amount of the syrup without developing any diarrhea. As cereal starches are added to the diet after the age of 6 months, the amount of syrup may be decreased.

In preparing the formulas, the syrup is stirred into the lactic acid milk until thoroughly mixed. In cold weather the syrup may first be diluted with an equal volume of warm water, to facilitate mixing with the milk. The entire day's feedings are made up at one time, and preferably kept cool until used. No further sterilization is necessary. Feedings are given at four-hour intervals, six feedings a day for very young or undernourished infants, five feedings otherwise. The amount at a feeding is determined by the appetite and symptoms presented by the baby. In general, about the same amounts are taken as is customary for other regularly used formulas; that is to say, the average infant will take feedings of about 2 ounces at 1 week of age, 3 or 4 ounces at a month, 6 ounces at 4 months, and 7 or 8 ounces from the sixth month on.

It is thus seen that the infant receives a formula of approximately the same composition throughout the whole first year. There is a relatively higher proportion of sugar in the mixture for the younger than for the older infants, but the difference is not great. Indeed, we have found that a single formula may be used very satisfactorily throughout the first year. Such a formula for general use is prepared by mixing corn syrup and lactic acid milk in the proportion of 1 ounce to the pint. The infant is given about as much as he desires every four hours.

Such a procedure is, at first sight, at variance with what have been considered, by some, to be the underlying principles of scientific infant feeding. The real reason, however, for modifying milk so as to provide different formulas for different ages is the incapacity of the young infant to digest sweet cow's milk. As the infant becomes older, the digestive tract accommodates itself to cow's milk, and a larger proportion of the food intake can be given in that form. With cow's milk rendered readily digestible by addition of acid, the need for such modification largely disappears. It is well to take cognizance of the fact that the normal infant receiving his natural diet from the mother's breast gets the same formula each month and takes about all he desires.

It is, of course, at times advisable to alter the formulas to meet definite indications. This is very simply accomplished. Skimmed milk may be substituted for all or a portion of the whole milk. The amount of added syrup may be decreased. We would, however, warn against too frequent meddling with the formula, and especially against prolonged underfeeding. The great advantage of the type of food described is that it is a concentrated one and provides a means of giving the infant, in a reasonable number of ounces, sufficient calories and a sufficient amount of each of the food constituents. Dilution of the formulas defeats the object aimed at.

It is to be noted that the formulas are not of the "get fat quick" type containing a disproportionately large amount of carbohydrate. The other food elements, fat,

6. Ohta, K.: Jahrb. f. Kinderh. **85**: 358, 1917.

7. The average composition of corn syrup is: dextrin, 55 per cent.; maltose, 30 per cent.; glucose, 15 per cent. It is prepared by the acid hydrolysis of starch. One ounce by volume (two tablespoonfuls) is equivalent to 1 ounce of sugar. The caloric value is 120 an ounce.

protein and salts, are also present in considerable concentration. The gains in weight are not due to the building up of flabby, waterlogged tissues, as is the case in condensed milk feeding. The lack of resistance to infection and the sudden nutritional catastrophes seen in the case of infants fed for a prolonged period on foods of the condensed milk type are not observed in infants fed on the lactic acid milk formulas, even when these formulas are fed continuously over many months.

RESULTS OBTAINED

Aside from any theoretical considerations involved, the only real test of the value of any method of infant feeding is the behavior of the infant receiving the food. During the last two years, approximately 90 per cent. of the infants in the wards of the St. Louis Children's Hospital have been fed on undiluted whole lactic acid milk to which corn syrup has been added. The infants admitted to the hospital have, with very few exceptions, been what would ordinarily be classed as difficult feeding cases, or else have been those suffering from definite disease. It has been the policy of the institution to admit only those infants that could not be treated satisfactorily in the home or in the outpatient clinic.

The records of all infants under 1 year of age in the hospital during the last two years have been analyzed in order to ascertain the results of lactic acid milk feeding. As temporary gains in weight are common on any food, all infants fed on the formulas for less than one week were eliminated from the series analyzed. Furthermore, fictitious gains in weight due obviously to saline injection were not recorded. Infants suffering from proved tuberculous meningitis and septicemia were not included in the series. This left 142 infants for consideration.

Of the 142 infants whose records were analyzed, seventy-eight, or 55 per cent., were suffering from infections during the period of observation. These infections included otitis media, fifty-three; pneumonia, twenty; pyelitis, thirty-eight; meningitis, three; pulmonary tuberculosis, two; bacillary dysentery, ten, and osteomyelitis, two. Included in the series were also cases of congenital syphilis, pyloric stenosis, congenital malformation of the heart, and spina bifida; in short, the usual run of cases seen in the infant ward of any large hospital. A large proportion of the infants were much underweight.

The ages of the infants varied from 2 days to 1 year. Six premature infants were included in the series. More than half of the infants were under 3 months of age. The number of days the infants were on the formulas varied from seven to 120. The average was twenty-two days.

The average number of calories fed was 153 per kilogram of body weight (70 calories a pound). Seventeen of the infants received more than 200 calories per kilogram of body weight (90 calories a pound).

For the entire group, the average daily gain in weight was 28 gm. (9/10 ounce).

This satisfactory nutritional result in a group of sick infants under hospital conditions has served to confirm our original impression of the value of the food of the type described.

Gain in weight is not the sole criterion of the suitability of the diet. The infants in the series rarely developed diarrhea or vomiting. None died as the result of gastro-intestinal disturbances attributable to overfeeding. Most striking of all has been the fact that the mortality among athreptic infants in the hospital has fallen from 78 per cent. in 1919 to 26 per cent. during the past year.

In the Washington University Dispensary, more than half of the infants coming under observation during the last two years have been fed on the lactic acid milk and corn syrup mixtures, and the results in these infants have been appreciably better than in any other artificially fed group. The method has also been extensively used in a number of the municipal feeding clinics in the city of St. Louis and in the private practice of a rather large group of pediatricians. Certainly, more than 1,000 infants in St. Louis have been fed on the formulas described, and the results have been so generally satisfactory that a still wider use of the method is to be recommended.

500 South Kingshighway.

THE TRANSMISSION OF ARSENIC FROM MOTHER TO FETUS *

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AND
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The earliest record found on the antenatal treatment of congenital syphilis was that of Bertin [1] in 1810. Lancercaux,[1] in 1868, admitted that, in his opinion, antenatal treatment was the correct method of procedure; but there still existed, at that time, a well recognized school which taught that it was both wrong and dangerous. The treatment at that time consisted in the administration of mercury in some form plus the free use of potassium iodid. This method of treatment had only a slight degree of success. Since the introduction of arsphenamin, the antenatal treatment of congenital syphilis with arsenic and mercury has had a surprising degree of success. Greenlees [2] and Findlay [3] report complete success in their series of cases, which, although few in number (fifteen), contained some that have been followed for a period of seven years. Fordyce and Rosen [4] have obtained excellent results after adequate antenatal treatment. In their series, the newborn were and remained both clinically and serologically free from syphilis. Adams [5] reports very satisfactory results in a large series of cases.

Williams [6] shows that almost ideal results follow the efficient treatment of syphilitic pregnant women. Furthermore, surprising results may sometimes follow what would ordinarily be regarded as altogether inefficient treatment in men or nonpregnant women. This would seem to indicate that pregnant women are unusually amenable to treatment. Such a general uniformity of successful results can be attributed only to the effectiveness of the antenatal treatment. The increasing efficiency in the methods of treatment, and the more thorough routine investigation of prospective mothers, make one feel more optimistic for a future reduction in the number of abortions, stillbirths and active cases of congenital syphilis. Some mothers

* From the Department of Pharmacology and Toxicology, Yale University School of Medicine.

* The data are taken from the thesis of Frank G. Amatruda, M.D., presented in partial fulfilment of the requirements for the degree of M.D., Yale University, 1923.

1. Quoted by Greenlees (Footnote 2).
2. Greenlees, J. R. C.: Glasgow M. J. **96**: 270 (Nov.) 1921.
3. Findlay, L.: Brit. M. J. **2**: 887 (Nov. 26) 1921.
4. Fordyce, J. A., and Rosen, Isadore: Treatment of Antenatal and Congenital Syphilis, Arch. Dermat. & Syph. **5**: 1 (Jan.) 1922.
5. Adams, J.: Brit. M. J. **1**: 56 (Jan. 14) 1922.
6. Williams, J. W.: Bull. Johns Hopkins Hosp. **33**: 383 (Nov.) 1922.

receiving antenatal treatment continued to have a four plus Wassermann reaction post partum, although their new-born infants were and remained clinically and serologically free from syphilis. Can this be explained on the basis of some protective function of the placenta, or some vitalistic property of that organ in keeping the drug in greater concentration in the fetal circulation? Is it a greater and more direct action of the arsphenamin on the spirochetes in the placenta, because of the greater vascularity of this organ? Or must we say, because of our ignorance on the subject, that it is due to some unknown immunologic reaction? It is with these points of view in mind that this investigation was undertaken, with the hope that it might throw some light on the explanation of this more specific action of antenatal treatment of syphilis on the fetal tissues.

HISTORICAL

Fundamentally, two antagonistic theories have been developed to explain the phenomenon of placental transmission. One, the vitalistic, assumes that the chorionic epithelium takes a specific vital part in placental interchange. The other, the mechanistic, regards this wall as a passive, semipermeable membrane, conforming to the laws of osmosis and diffusion. The vitalistic view gained many adherents after several investigators demonstrated the presence of enzymes in the placenta. These lipolytic, diastatic and proteolytic enzymes were never shown to be active agents in causing placental interchange. In fact, Slemons [7] suggested that these enzymes probably have to do merely with the living processes of the cells in which they are found. Edelstein and Ylppö [8] state that placental transmission cannot be explained merely by the laws of diffusion and osmosis, since they find a greater concentration of the sodium and potassium salts in the fetal than in the maternal blood.

In behalf of the mechanistic theory an enormous amount of experimental work and literature has accumulated, and the consensus of opinion now favors this theory. The growth of the fetus offers conclusive evidence that the interchange of oxygen and nutritious material from mother to fetus, and of waste products in the opposite direction does occur. Several investigators have shown experimentally that oxygen and carbon dioxid are transmitted readily through the placenta, moving from the point of higher to that of lower concentration. Zweifel [9] and Nicloux [10] made similar observations on the transmission of chloroform and ether, respectively. The transmission of substances in solution was first demonstrated by Mayer [9] in 1817, who observed the toxic effects of potassium cyanid in the mother after injecting the salt into the fetus. Gusserow,[11] in 1878, concluded that substances were transmitted from mother to fetus. He established the fundamental fact that, provided the placenta is normal, no insoluble substance may pass it. The researches of many men have demonstrated the transmission of several other substances, as strychnin, potassium cyanid, methylene blue, nicotin, curare, potassium iodid, physostigmin, phlorizin, pilocarpin, sodium salicylate and epinephrin. Nicloux summarized the literature up to 1909 and divided substances into two groups: (1) those soluble in water and diffusible, which traverse the placenta and (2) those insoluble in water and not diffusible, which do not traverse the placenta. Wislocki,[12] experimenting with a crystalloid (phenolsulphonephthalein) and a colloid (trypan blue), also comes to similar conclusions.

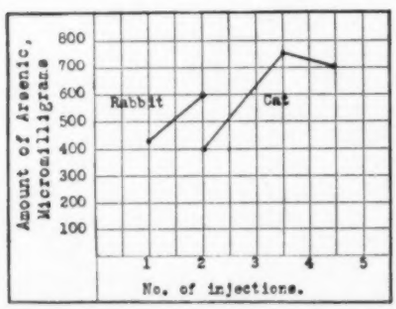

Chart 1.—Accumulation of arsenic in placenta.

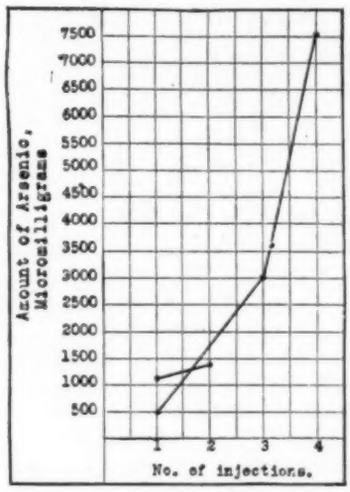

Chart 2.—Accumulation of arsenic in maternal liver after serial injections.

The normal constituents of human blood have also been examined quantitatively in the mother and the fetus at the time of delivery, and the results mostly conform to the mechanistic view. Thus, Kingsbury and Sedgwick [13] obtained the same average for uric acid. Plass [14] found that creatinin exists in the same concentration in both maternal and fetal blood. Slemons and Morriss [15] have shown that the urea and nonprotein nitrogen content is the same. Morriss [16] found the sugar content to be slightly lower in the fetal blood at the time of delivery. This he explains by the fact that the sugar content in the maternal circulation is raised during the second stage of labor. On the other hand, Morse [17] finds a constantly higher concentration of the amino-acid content of the fetal blood over that of the mother's. An excess of amino-acids amounting to about 2 mg. of nitrogen appears uniformly in favor of the fetal plasma.

Krönig and Führ [9] attempted to prove the mechanistic theory on the principles of physical chemistry. They investigated the freezing point of maternal and fetal blood, and found that the two freeze at the same temperature. This indicates that they have the same osmotic pressure; hence interchange may occur equally well in either direction.

The work of Bourquin [18] and others has shown that many toxins, antitoxins, agglutinins and hemolysins are readily transmitted through the placenta and tend to come to the same concentration. Recently, Givens and Howe,[19] working on the nutrient amino-acids and glucose, and catabolites urea and uric acid, conclude that the process of simple diffusion offers the most reasonable explanation for placental transmission. Quite different are the results of Slemons and Stander [20] on

7. Slemons, J. M.: Tr. Am. Gynec. Soc. **44**: 113-115, 1919.
8. Edelstein, F., and Ylppö, A.: Ztschr. f. Kinderh. **27**: 79 (Nov. 3) 1920; abstr., J. A. M. A. **76**: 347 (Jan. 29) 1921.
9. Quoted by Williams: Obstetrics.
10. Nicloux: Arch. mem. d'ob. et de gynéc. **2**: 840, 1909.
11. Gusserow: Arch. f. Gynäk. **13**: 56, 1878.
12. Wislocki, G. B.: Bull. Johns Hopkins Hosp. **32**: 93 (March) 1921.
13. Kingsbury, F. B., and Sedgwick, J. P.: J. Biol. Chem. **31**: 261 (July) 1917.
14. Plass, E. D.: Bull. Johns Hopkins Hosp. **28**: 297 (Sept.) 1917.
15. Slemons, J. M., and Morriss, W. H.: Bull. Johns Hopkins Hosp. **27**: 343 (Dec.) 1916.
16. Morriss, W. H.: Bull. Johns Hopkins Hosp. **28**: 140 (April) 1917.
17. Morse, A.: Bull. Johns Hopkins Hosp. **28**: 199 (June) 1917.
18. Bourquin, H.: Am. J. Physiol. **59**: 122-143 (Feb.) 1922.
19. Givens, W. H., and Howe, M. G.: Chemical Studies of Blood of Mother and Fetus, Am. J. Dis. Child. **25**: 63-75 (Jan.) 1923.
20. Slemons, J. M., and Stander, H. J.: Bull. Johns Hopkins Hosp. **34**: 7-10 (Jan.) 1923.

the content of the nondiffusible fats and colloids. The mother's blood contains much more of these substances than does the fetal. Regarding the transmission of formed substances, the work of Bounet,[9] Hofbauer, Wallgren, Ascoli and others clearly shows that substances such as iron, fat and albuminous substances are eventually passed into the fetal circulation after first undergoing radical changes in the syncytium (Williams).

"Finally, the question as to whether the placenta acts as an efficient filter against bacteria has given rise to a great deal of discussion, but at present the consensus of opinion regards such an occurrence as unusual and associated with some lesion of the organ."

TABLE 1.—*Findings in Experiment 1*

Neo-Arsphenamin Injected (Time) 1923	Amount Injected, Gm.	Animal Killed	No. of Hours After Last Injection, Hours	No. of Embryos Found at Necropsy	Total Weight Embryos, Gm.
Oct. 18 (3 p. m.)	0.15	Oct. 19 (10 a. m.)	19	8	160

TISSUES EXAMINED FOR ARSENIC

Tissue	Weight, Gm.	Amount of Tissue Examined, Gm.	Amount of Arsenic Recovered in Tissue Examined, Micro-milligrams	Total Amount of Arsenic in Tissue (Calculated) Micro-milligrams
Maternal liver	80	20	300	1,200
Maternal kidney	20	20	160	160
Placenta	60	20	140	420
1 whole embryo	20	20	None	0
7 fetal livers	15	15	None	0

Rabbit: weight, 3,600 gm.; one injection given

TABLE 2.—*Findings in Experiment 2*

Neo-Arsphenamin Injected (Time) 1923	Amount Injected, Gm.	Comment
April 13	0.15	Animal had already given birth to 4 embryos when seen the following day

TISSUES EXAMINED

Tissue	Weight, Gm.	Amount of Arsenic Found	Comment
Two whole embryos	75	Very slight trace	No other tissue examined

Rabbit: weight, 2,300 gm.

EXPERIMENTAL

As stated, this communication deals with the transmission of arsenic from mother to fetus. Rabbits and cats were injected with neo-arsphenamin, intravenously. The rabbits were injected into the ear vein without an anesthetic. The cats had to be anesthetized with ether before each injection, as these animals were uncontrollable otherwise. They were injected into the superficial femoral vein after the latter had been exposed by a small nick in the skin. After the desired number of injections had been given, the animals were killed. The time interval between injections was always about twenty-four hours, and the animals were killed about the same number of hours after the last injection.

The tissues to be examined for arsenic were oxidized by Gautier's method as simplified by Johnson and Chittenden.[21] The method for examining quantitatively the arsenic in the tissues was that of Gutzeit as modified by Sanger and Black.[22]

The maternal, fetal and placental tissues were examined for the presence of arsenic after the animals had received a varying number of injections. The results of the examinations are tabulated. A few points are interesting and worth mentioning. It will be noticed that in practically every case, traces of arsenic were detected in the fetal tissues. The amount of arsenic obtained from the fetal tissues was never more than a trace, regardless of the number of serial injections received by the animal. On the other hand, examination of the maternal liver and placenta shows that the amount of arsenic recovered from them increases with the number of serial injections the animal had received. From the results obtained there is little doubt that arsenic is stored up in the placenta and maternal liver after serial injections, as contrasted with the fetal tissues.

TABLE 3.—*Findings in Experiment 3*

Neo-Arsphenamin Injected (Time) 1923	Amount Injected, Gm.	Interval Between Injections, Hours	Animal Killed	No. of Hours After Last Injection	Comment
1st dose, Jan. 22 (11 a. m.)	0.15	..	Jan. 24, 3 p.m.	..	8 embryos found at necropsy; total wt., 225 gm.
2d dose, Jan. 23 (5 p. m.)	0.15	30	.....	22	

TISSUES EXAMINED

Tissue	Total Weight of Tissue, Gm.	Amount of Tissue Examined, Gm.	Arsenic Found in Tissue Examined, Micro-milligrams	Total Amount of Arsenic in Tissue (Calculated) Micro-milligrams
Maternal liver	100	25	350	1,400
Maternal kidney	22	22	350	350
Placenta	60	25	250	600
1 whole embryo	30	30	Trace	Trace
7 fetal livers	20	20	Faint trace	Faint trace

Rabbit: weight, 3,800 gm.; two injections given.

TABLE 4.—*Findings in Experiment 4*

Neo-Arsphenamin Injected (Time) 1923	Amount Injected, Gm.	Interval Between Injections, Hours	Comment
1st dose, April 13 (5 p.m.)	0.15	..	Animal had given birth to 5 embryos when seen the following morning, April 17
2d dose, April 14 (4 p.m.)	0.15	23	
3d dose, April 15 (4:30 p.m.)	0.15	24½	
4th dose, April 16 (5 p.m.)	0.15	24½	

TISSUES EXAMINED

Tissue	Wt., Gm.	Amount of Arsenic Found	Remarks
1 whole embryo	30	Slight trace	No other tissues examined

Rabbit: weight, 3,000 gm.; four injections given.

TABLE 5.—*Findings in Experiment 5*

Neo-Arsphenamin Injected (Time) 1923	Amount Injected, Gm.	Interval Between Injections, Hours	Animal Killed	No. of Hours After Last Injection	Comment
1st dose, March 8 (4 p. m.)	0.15	..	March 10, 1923, 7 p. m	..	4 embryos found at necropsy; total weight, 336 gm.
2d dose March 9 (4 p. m.)	0.15	30	....	27	

TISSUES EXAMINED

Tissue	Total Weight of Tissue, Gm.	Amount of Tissue Examined, Gm.	Arsenic Found in Tissue Examined, Micro-milligrams	Total Amount of Arsenic in Tissue (Calculated) Micro-milligrams
Maternal liver	90	30	175	525
Placenta	50	30	240	400
4 fetal livers	30	30	Slight trace	Slight trace

Cat: weight, 3,600 gm.; two injections given.

21. Johnson and Chittenden: Quantitative Chemical Analysis, Fresenius and Cohn **2**: 693.

22. Sanger and Black: Proc. Am. Acad. Arts & Sc. **43**: 8, 1907.

COMMENT

This communication presents several interesting points for speculation. It is obvious from the data presented that arsenic is transmitted through the placenta in small quantities, after the intravenous injection of neo-arsphenamin. Whether the drug exists in the same concentration in the maternal and fetal circulations cannot be answered, as the maternal and fetal blood were not examined separately. It is appropriate to mention here that Raiziss,[23] working on the colloidal properties of arsphenamin and its allied products, observed that these drugs were less diffusible through a semipermeable membrane than sodium chlorid. Arsphenamin was twenty-five times less diffusible, and neo-arsphenamin, the drug used in these experiments, was slightly more diffusible than arsphenamin. Since colloids are not transmitted through the placenta, one would expect to find the arsenic in greater concentration in the maternal than in the fetal circulation if the neo-arsphenamin retains its partial colloidal property after intravenous injection.

TABLE 6.—*Findings in Experiment 6*

Neo-Arsphenamin Injected (Time) 1923	Amount Injected, Gm.	Interval Between Injections Hours	Comment
1st dose, March 22 (4 p. m.)	0.15	..	Animal died, March 24, 3 p. m., 22½ hours after last injection;
2d dose, March 23 (4:30 p. m.)	0.15	24½	3 embryos found at necropsy; total weight, 330 gm.

TISSUES EXAMINED

Tissue	Weight of Tissue Examined, Gm.	Amount of Arsenic Found	Comment
1 whole embryo	100	Faint trace	No other tissue examined
2 fetal livers....	11	None	

Cat: weight, 3,500 gm.; two injections given.

TABLE 7.—*Findings in Experiment 7*

Neo-Arsphenamin Injected (Time) 1923	Amount Injected, Gm.	Interval Between Injections, Hours	Animal Killed	Comment
1st dose, March 12 (5:30 p. m.)	0.15	..	Cat found dead morning after last injection, March 15	6 embryos found at necropsy; total weight, 400 gm.
2d dose, March 13 (5:30 p. m.)	0.15	24		
3d dose, March 14 (4 p. m.)	0.15	24½		

TISSUES EXAMINED

Tissue	Total Weight of Tissue, Gm.	Amount of Tissue Examined, Gm.	Arsenic Found in Tissue Examined, Micro-milligrams	Total Amount of Arsenic in Tissue (Calculated) Micro-milligrams
Maternal liver.....	120	30	750	3,000
Placenta.....	90	30	250	750
1 whole embryo.....	65	65	Trace	Trace
5 fetal livers.....	30	30	Slight trace	Slight trace

Cat: weight, 3,500 gm.; three injections given.

The fact that arsenic is not stored in the fetal tissues is of considerable clinical importance. The drug can be safely administered in the antenatal treatment of syphilis, in the ordinary doses given to men and nonpregnant women, without any danger of its having a toxic effect on the fetus.

The best scientific explanation that can be offered to explain the greater efficiency of the antenatal treatment of syphilis, especially in the new-born, is based on two important facts: 1. The arsenic can act in greater concentration on the spirochetes in the placenta, where the spirocheticide is stored after serial injection. 2. The drug has a more direct access to the spirochetes in the placenta, owing to the greater vascularity of this organ.

23. Raiziss, G. W.: J. Pharmacol. & Exper. Therap. **19**: 271, 1922.

CONCLUSIONS

1. Arsenic is detected in small traces in the fetal tissues after the intravenous injection of neo-arsphenamin into the maternal circulation.

2. The amount of arsenic recovered from the fetal tissues does not increase in proportion to the number of serial injections given.

TABLE 8.—*Findings in Experiment 8*

Neo-Arsphenamin Injected (Time) 1923	Amount Injected, Gm.	Interval Between Injections, Hours	Animal Killed	Comment
1st dose, March 26 (5 p. m.)	0.2	..	Animal found dead following morning, March 30	4 embryos found at necropsy; total weight, 400 gm.
2d dose, March 27 (5:30 p. m.)	0.2	24½		
3d dose, March 28 (4 p. m.)	0.2	22½		
4th dose, March 29 (4:30 p. m.)	0.2			

TISSUES EXAMINED

Tissue	Total Weight of Tissue, Gm.	Amount of Tissue Examined, Gm.	Arsenic Found in Tissue Examined, Micro-milligrams	Total Amount of Arsenic in Tissue (Calculated) Micro-milligrams
Maternal liver.....	75	20	2,000	7,500
Placenta.....	70	20	200	700
1 whole embryo.....	100	100	Material lost	
3 fetal livers.....	17	17	Slight trace	Slight trace

Cat: weight, 3,400 gm.; four injections given.

TABLE 9.—*Accumulation of Arsenic in Tissues After a Varying Number of Injections*

Animal Used	Number of Injections Received	Arsenic Recovered from the Placenta, Micro-milligrams	Arsenic Found in Maternal Liver, Micro-milligrams	Arsenic Recovered from Whole Embryo	Arsenic Recovered from Fetal Liver
Rabbit.....	1	420	1,200	0	0
Rabbit.....	1	Not examined	Not examined	Very slight trace	Not examined
Rabbit.....	2	600	1,400	Trace	Slight trace
Rabbit.....	4	Not examined	Not examined	Slight trace	
Cat.....	2	400	525	Not examined	Slight trace
Cat.....	2	Not examined	Not examined	Slight trace	0
Cat.....	3	750	3,000	Trace	Slight trace
Cat.....	4	700	7,500	Material lost	Slight trace

3. Arsenic is stored in the maternal liver and placenta, the amount increasing with the number of injections.

4. The explanation offered for the efficiency of antenatal treatment of syphilis, especially on the new-born, is that the spirocheticide acts in greater concentration and more directly on the spirochetes in the placenta.

Experimental Inoculation of Man with Syphilis.—G. Thibierge and J. Lacassagne have published a historical review of forty-eight experiments of this kind (*Annales de Dermatologie*, September and October, 1923). They cite a long list of attempts, between 1835 and 1862, to cure lupus, prurigo, leprosy or syphilis by injection of syphilitic material. Later, Pellizzari demonstrated on five student volunteers that the blood can transmit syphilis, but only when fresh. It was in 1906 that Maisonneuve volunteered to prove the efficacy of calomel ointment, and later, Magian, of a French arsphenamin as a preventive of syphilitic infection. In these and other similar negative experiences, monkeys injected with the same virus all developed syphilis.

RESULTS OBTAINABLE THROUGH INSTRUMENTAL TREATMENT OF PYORRHEA

A HISTOLOGIC STUDY *

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SAN FRANCISCO

The wide dissemination of information concerning research on focal infections in the last decade has brought the physician and the dentist into close cooperation. A great variety of conditions, from rheumatism to insanity, have been attributed by different investigators to dental infections.

The extremists have no difficulty in disposing of their problems. The radical adopts heroic surgery, and the skeptic disregards the teeth entirely. The man who follows the middle path (and he is representative of the bulk of the members of the two professions) finds it difficult after studying the conflicting literature and reflecting on the variability of his own experiences to orient himself satisfactorily on the relationship of teeth to health. Consequently, any data that may serve to throw additional light on this subject are of interest to him.

Pyorrhea is one of the sources of mouth infection. The physician is interested to know the amount and kind of infection in his patients' mouths, the nature of portals of entry, and the effects obtainable through treatment. He is also concerned with the rapidity with which results can be obtained and with the permanence of such results.

Fig. 1.—Two adjacent bicuspids, their peridental membranes, the septal gum and the intervening alveolar process.

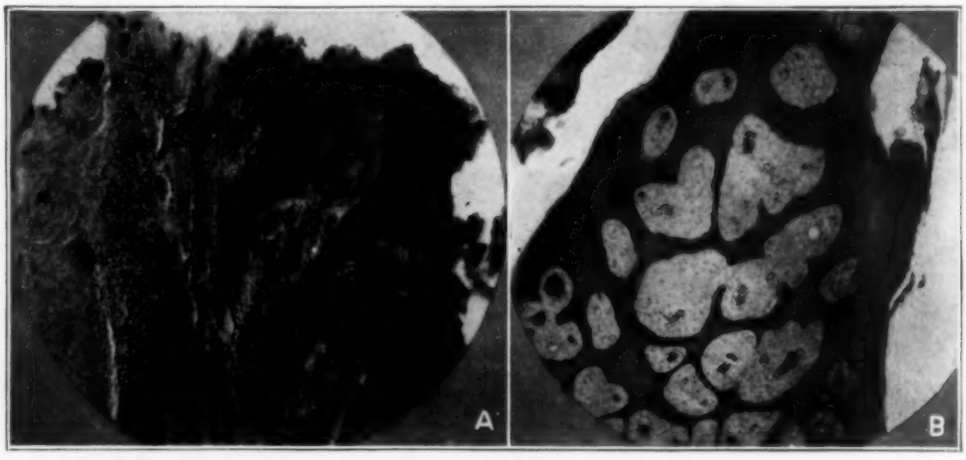

Fig. 2.—Septal gum: *A*, intense inflammation, round cell infiltration, edema, hemorrhagic elements, and almost complete destruction of epithelium; *B*, lessened inflammation, basement membrane and epithelium intact and complete.

The present study was pursued in collaboration with Dr. W. H. Hanford of Oakland, and Drs. C. O. Patten and Clayton Westbay of San Francisco. It was undertaken in an effort to determine whether a regeneration of tissue, lost through pyorrhea, was possible; whether, if new tissue was formed, it would be merely scar or a true structural rebuilding.

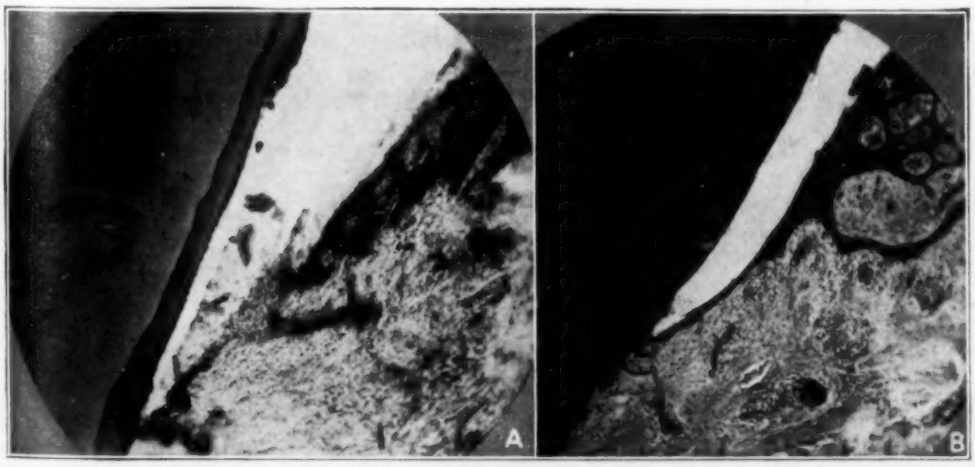

Fig. 3.—Junction of septal gum and tooth: *A*, inflammation, destruction of epithelium, and detachment: *B*, point of junction of gum and tooth: lessened, inflammation, new epithelium, reattachment (tear at bottom of subgingival sulcus probably artefact due to cutting on microtome. New sections are being prepared for a closer study of this detail.

DISEASED TISSUE

Patients were selected from whom pyorrheic tissue might be excised for study of the disease. Roentgenograms were taken before removal of the material, and a very careful record was made of the extent of detachments (depth of pockets). Microscopic examination of the section shown in Figure 1 gave the findings illustrated in Figures 2 *A*, 3 *A*, 4 *A* and 5 *A*.

Figure 6 represents fields from a transverse section of a pyorrheic bicuspid with its circumjacent tissues. Three stages of destruction are evident. At the left is shown partial destruction of the alveolar process: osteoclastic action at *C*, osteomyelitis at *B*. The illustration in the center exhibits but one fragment remaining, *A*, and at the right the bone has completely

* From the California Stomatological Research Group; supported in part by the California State Dental Association.

* Read before the Section on Stomatology at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

disappeared and an erosion of the tooth has penetrated through the cementum, *A*, into the detin, *B*.

TREATED TISSUE

A case was now selected, which roentgenographically and clinically was very similar to the preceding. That

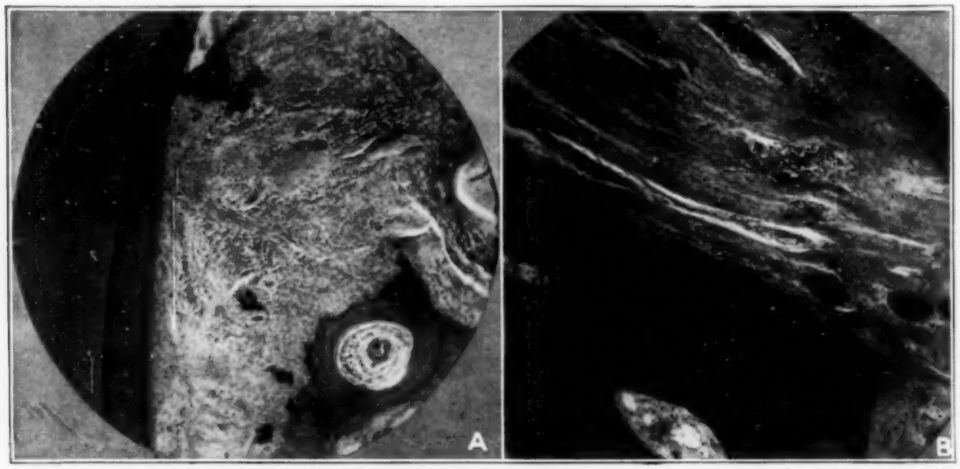

Fig. 4.—Peridental membrane in the region of the crest of the alveolar process: *A*, inflammation of membrane, erosion of bone by osteoclasts, and osteomyelitis; *B*, general repair of bone, lessening of inflammation, absence of osteomyelitis.

is, a patient was sought presenting two pyorrheic bicuspids in which the amount of destruction was as nearly as possible the same as that in the case from which the diseased tissue was removed. (It was necessary also to find a case in which the removal of the tissue was justified by prosthetic requirements.)

Such a patient being found, a very careful instrumental examination was made. The extents of detachments were recorded on a special chart. Roentgenograms were taken with a machine which made it possible to determine the current, time of exposure,

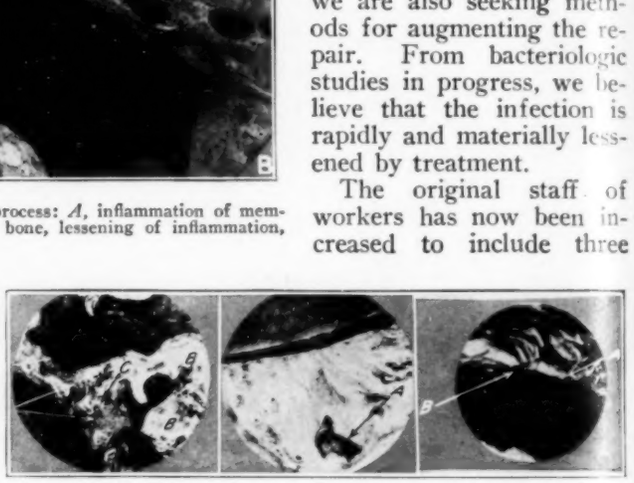

Fig. 6.—Fields from a transverse section of a pyorrhetic bicuspid with its circumjacent tissues: At left, partial destruction of alveolar process; *B*, osteomyelitis; *C*, osteoclastic action; in center, only one fragment remaining; at right, complete disappearance of bone; erosion of tooth has penetrated through cementum, *A*, into dentin, *B*.

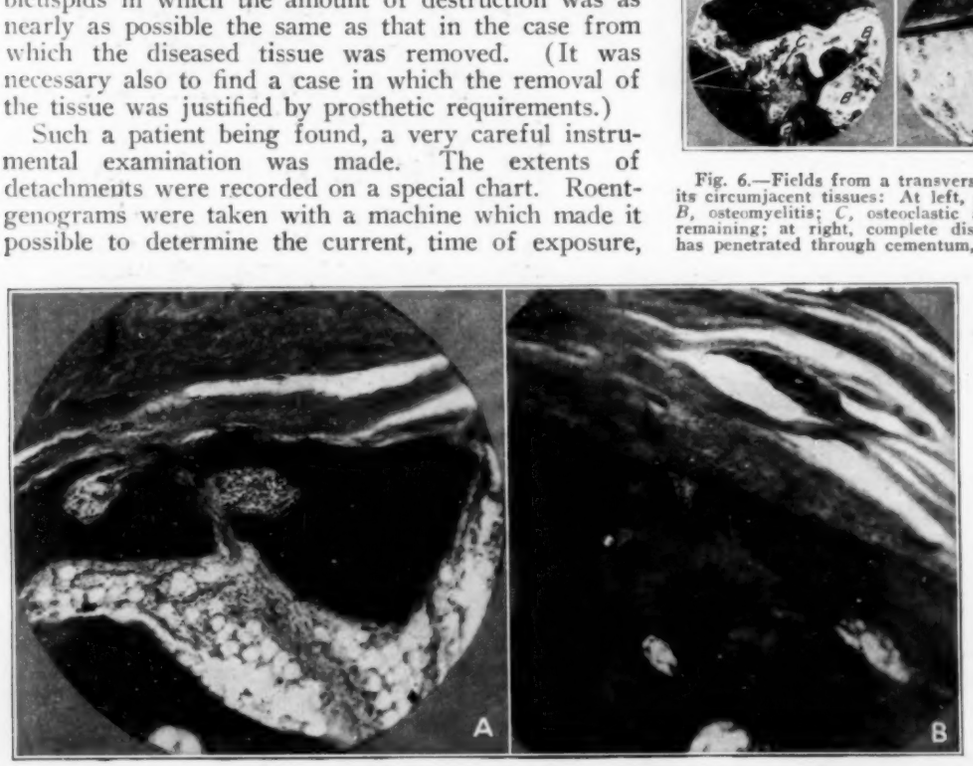

Fig. 5.—Crest of alveolar septum between the two teeth: *A*, osteoclastic action on bone and osteomyelitis; *B*, filling in of bone; one salient of destruction persisting; lessened inflammation.

angle, position, etc. Photographs were taken and models prepared. The tissues were then treated (by instrumentation, scaling roots and mechanical stimulation) for nine months. A new examination and chart were made; new roentgenograms taken (under the same exposure and from the same relative position as before). Photographs and models were again prepared. According to the data thus obtained, there was an average lessening in depth of pockets of about 2 mm. The tissue was now excised and prepared for the microscope (Figs. 2 *B*, 3 *B*, 4 *B* and 5 *B*).

CONCLUSIONS

As a result of this work, we believe that instrumental treatment of pyorrhea is beneficial, that some regeneration takes place, and that the histologic picture of the treated tissue is essentially constructive, while that of the diseased tissue is essentially destructive. The amount of regeneration possible we hope to determine by further work; we are also seeking methods for augmenting the repair. From bacteriologic studies in progress, we believe that the infection is rapidly and materially lessened by treatment.

The original staff of workers has now been increased to include three physicians, two bacteriologists, one chemist, one biochemist, four dentists and two student assistants. It is organized as the California Stomatological Research Group. A composite study of pyorrhea and allied problems is being made. The work is being carried on at San Quentin Prison, through the support of Warden James A. Johnston, and with the cooperation of Dr. L. L. Stanley, resident physician. The services of the members of the group are largely volunteer; some financial support is being received from the California State Dental Association. The work is also being strongly aided by Dean Guy S. Millberry of the University of California Dental College.

Diet.—Diseases of the large bowel are assuming increased importance owing largely to their becoming more common. This is probably to be attributed more to modern methods of dietary than to any other factor.—Mummery.

OSTEITIS FIBROSA

REPORT OF CASE *

HERBERT A. POTTS, M.D.
AND
EDWARD H. HATTON, M.D.
CHICAGO

The case here presented is of especial interest because of the disastrous cosmetic result which would of necessity follow radical surgical treatment.

On account of its slow development without influence on the general health, and the fact that a supposedly similar tumor had been successfully removed from the left maxilla seven years previously, it was thought to be not malignant, especially as no metastases had developed.

As the disease is now so wide spread, involving, as it does both sides of the lower jaw and the remaining right maxilla posterior to the first bicuspid, it is a problem to decide on proper treatment.

The previous removal of the left maxilla had left a large hole in the antrum; but, fortunately, as the natural ostium has closed there is no derangement of speech, an unusual sequence, which probably would not follow if the right maxillary tumor were removed in the same radical manner. The roentgenogram revealed narrow lines of rarefaction between the bony tumor and the cortical bone, which was very thin, suggesting a bony mass within a cyst.

INDICATIONS FOR TREATMENT

This suggested conservative surgical treatment, as at times cysts within bone disappear spontaneously or after a pathologic fracture; even puncture and aspiration for diagnostic purposes has stimulated resolution, possibly in the same manner that aspiration of a serous pleural effusion often activates a resorption. Consequently, only the mass, which was encroaching on the tongue and floor of the mouth, as well as a cherry-size tumor in the right upper first bicuspid region, was removed, and to date the condition has remained satisfactory; in fact, the roentgenogram shows the remaining bone to be more dense than before operation.

Following the operation, a portion of the tumor mass, 1 by 2 cm., became a sequestrum through infection, and was removed from the lower jaw. Nothing has been done with the three remaining tumors, situated in the rami and bodies of each side of the lower jaw, and in the upper right maxilla posterior to the bicuspid region.

The disease seems to be some disorder of metabolism, although a roentgenogram shows a normal sella turcica, and the microscope reveals a destruction of normal bone by fibrosis, with the development of new bone within the fibrous structure.

REPORT OF CASE

A woman, aged 28, had been exceptionally well. Her parents were both well, with the exception that her father suffered from "rheumatism," which was not serious. Her two brothers and nine sisters were living and well. She had diphtheria at 12 years of age, and no other illness. The Wassermann reaction was negative, and blood count normal. At 20 years of age she developed within two days a painful swelling above the roots of the upper molars of the left side; these teeth were extracted, and as the pain and swelling did not subside, the swelling was lanced; but no pus escaped. A week later, some soft tissue was cut away; this promptly healed, and she remained well for two years, when a painful red swelling developed within three days below the lower right cuspid. This was lanced on the outside and drained pus for four months. (We are inclined to think that both of these swellings were acute alveolar abscesses and bear little or no relation to the present condition.)

PHYSICAL EXAMINATION

Six years ago, a painless lump slowly developed above the apexes of the upper left bicuspids. She went to a hospital, where it was cut away. The bicuspids were extracted, leaving the antrum open. The wound gradually healed, with the exception of a large opening into the antrum.

Last summer she sought relief from gradually enlarging painless swellings on each side of the face. Physical examination revealed a hard, painless, regular bony tumor involving the anterior portion of the left ramus and body of the jaw, extending as far forward as the first molar. The mental portion of the jaw was normal, but on the right side an irregular, painless, bony mass extended toward the floor of the mouth, half the way to the midline, and interfered with speech; to the buccal, beginning in the cuspid region, the mass was more regular and extended almost to the angle and involved the ramus, as on the opposite side.

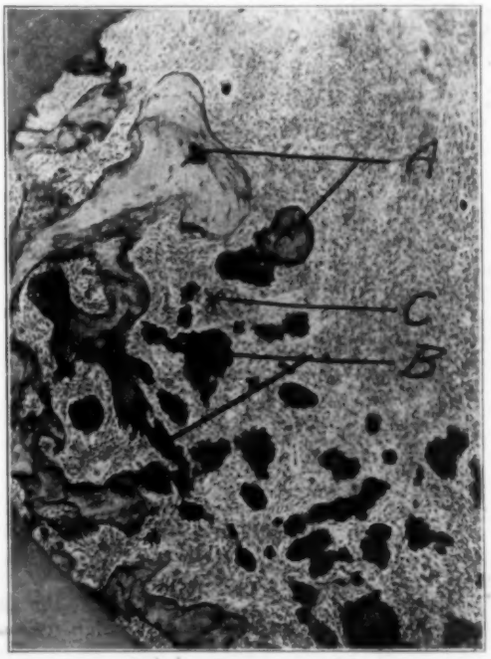

Fig. 1.—*A*, regions of lacunar bone; *B*, irregular, dense calcifications surrounded by *C*, fibrous tissue (8 mm. objective, 4 ocular; section stained with hematoxylin and eosin).

In the right side of the upper jaw was a cherry-size, smooth, similar growth in the first bicuspid region, which tooth was somewhat distorted, its root being included in a portion of the growth. Back of this growth was another one which involved the whole process and tuberosity, the second bicuspid and three molars being firmly embedded in the tumor.

PATHOLOGIC FINDINGS

The roentgenogram revealed abnormal bone of a spongy character quite "moth eaten" and cystic in places, parts of the peripheries being well defined by a narrow space of increased rarefaction. The two tumor masses, removed and examined, measured 3 by 1.5 and 2 by 1 cm., respectively, were nearly oval, and were covered by epithelium on one side; the remaining surfaces were smooth (made by surgical excision). Both were decalcified because of the bone hard nodules felt beneath the surfaces, and sections were made for immediate examination by freezing; other blocks were embedded in celloidin. No essential differences were observed

* Read before the Section on Stomatology at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

in the sections made by the two methods. Hematoxylin and eosin, thionin and picric acid, and hematoxylin and van Gieson's stain were used.

The epithelial covering was unchanged mucous membrane, except for a little flattening from compression. Between it and the bone was a layer of dense fibrous connective tissue forming a sort of capsule enclosing the deeper structures. The surfaces of the bone toward this capsule were smooth, and in many places covered with thin layers of new bone and, adjacent to these lamellae, many bone-forming cells. On the

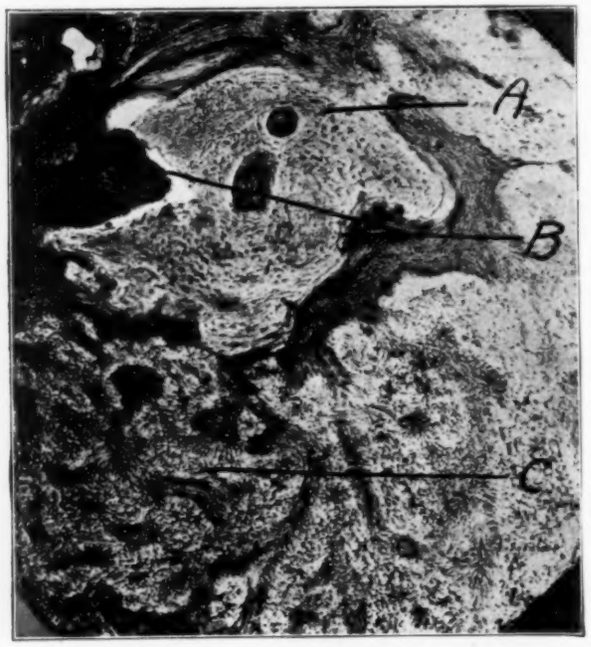

Fig. 2.—*A*, lacunar bone undergoing absorption *(B)*, surrounded by *C*, fibrous tissue with beginning calcification of its intracellular substance (8 mm. objective, 4 ocular; section stained with thionin and picric acid, Schmorl method).

opposite surfaces of this thin layer of rather cancellous bone, toward the center of the tumor masses, bone absorption was marked and many giant cells lay adjacent to the depressions so formed. The body of the swelling was made up of fibrous tissue, partly absorbed bone fragments, and spicules surrounded by thin layers of amorphous calcification, many vessels, and occasional collections of free blood or orange-yellow, rather amorphous, granular material in single or multiple cavities lined by thin, but dense, fibrous bands. In this central region, giant cells were very rare except adjacent to the cavities just described, where they were found but not at all numerous. The cystlike spaces varied from one third to one eighth of the diameter of a 16 mm. field. The calcification in this central portion was striking because it occurred in the abundant intercellular material of the fibrous connective tissue. There were occasional collections of small, round, mononuclear and plasma cells confined to the inside of the capsule.

There seemed to be three zones of change: At the periphery, a low grade inflammatory reaction with bone absorption toward the center, and compensatory new bone formation on the periphery. Second, a region made up of dense fibrous tissue with large spindle-shaped nuclei, very abundant intercellular deposits and no evidence of cell division. Calcification of the intercellular substance was frequent. Third, collections of blood more or less absorbed, resulting in the formation of cystlike cavities toward the center of the growth. Cartilage was not found in the sections examined.

COMMENT

The histologic picture is similar in many respects to that of a calcified fibroma; indeed, in this specimen the calcification is much more marked, and the number of giant cells is much less than in the majority of the instances of osteitis fibrosa described. Though the location in the bones of the face is much less common than in the long bones, this is one of the typical sites of the disease. This fact, and the localized, nearly solid, almost noncystic form of the lesions, are well worth emphasizing. The age of the patient, the location of the lesions and the clinical history suffice to distinguish it from Paget's form or leontiasis ossea. The absence of any histologic evidence of either tuberculosis or syphilis, and the negative Wassermann test, make a diagnosis of either of these conditions improbable.

Von Recklinghausen,[1] in 1891, described a disease of the bones previously confused with osteomalacia, cyst formation, fibroma and giant cell sarcoma, quite distinct from a similar bone disease found in the latter decades of life under the name of osteitis fibrosa (cystica). It is characterized by swellings arising from within the bones of young adults and children, associated with bone absorption, replacement of the absorbed bone by fibrous tissue and cystlike cavities, and more or less calcification of the newly formed fibrous tissue.

A generalized form of the disease is to be distinguished from a localized condition confined to one bone or a closely related group of small bones; and a solid type occasionally is found, in marked contrast to those in which the swelling is largely made up of one or more cystlike cavities.

These cystlike cavities seem to result from the incomplete absorption of blood extravasates; the collection of large numbers of foreign body giant cells about such regions give to these growths the appearance of a giant cell sarcoma. Occasionally, the condition may be confused with either syphilis or tuberculosis.

The rate of growth of these masses and cysts is slow; usually the etiology is not known or is unexplainable, although a single injury has preceded the onset in some cases, and, as the lesions advance and recede, the duration is a matter of years. The outcome of the localized form, especially of the single lesion, is usually favorable following treatment. But the prognosis of the generalized type is uniformly bad, death occurring from a cachexia similar to that found in malignant tumors. It is generally supposed that this is a low grade infection or some metabolic disorder rather than a tumor.[2]

31 North State Street—31 West Lake Street.

ABSTRACT OF DISCUSSION

DR. JOSEF NOVITZKY, San Francisco: I cannot tell Dr. Potts what to do with these cases. I wish that I knew. I have had two cases in the last four years which, in effect, may be comparable to this case that Dr. Potts has told us about. Microscopic examination was not made in my patients. Clinically, the picture was one due to septic teeth. Extensive cavitation of cancellous bone (abscess), complicated, in one case, by overdevelopment of subperiosteal cortical bone, caused confusion as to the etiology. In the second case, after surgical evacuation of the bone cavity, the subperiosteal cortical bone was seen to be enlarged up to two years after primary operation on the bone cavity. This patient was not a syphilitic. I wondered whether it might not be that much of

1. Von Recklinghausen, in Festschrift of Virchow's Assistant, 1891.
2. The number of articles discussing this condition is increasing with each year, so that no attempt is made here to make individual references. Further information may be found in the articles by Bloodgood, J. C.: Ann. Surg. **52**: 122, 1910. Koryjetzky: Arch. f. klin. Chir. **121**: 567, 1922; Beitr. z. klin. Chir. **68**, 1910. Rehu: Arch. f. klin. Chir. **74**: 476, 1904.

this overgrowth of subperiosteal osseous tissue could be comparable to callus which might be reabsorbed as the irritant became less and the periosteum asserted itself.

DR. GORDON NEW, Rochester, Minn.: I should like to congratulate Dr. Potts on his detailed clinical and microscopic study of this very interesting tumor. We all know that a great deal of clinical and pathologic work has been done on malignant tumors of the jaws. I think we should have more papers like Dr. Potts' on a detailed study of benign tumors so that we would have a definite pathologic picture to associate with the clinical one.

DR. H. A. TUCKEY, San Francisco: I should like to bring out the point about the pathologic laboratory and microscopic examination of these malign tumors. It seems to be the fact that laboratory examination will usually return giant cell findings which are naturally of a serious nature. I think our clinical findings should govern us more in these cases than laboratory findings, along with roentgenograms. I speak of one patient in particular who was operated on in 1920. She was a girl, aged 18. She had a tumor-like mass the size of a walnut under the lower first molar, with practically everything absorbed up to the crown of the tooth. The pulp of the tooth was vital. She manifested symptoms of mumps, swelling, and a temperature of 103 F. for two days. That was while she was in the hands of a physician. He suspected a process going on in the jaw, which was substantiated by roentgen-ray examination. Clinically, she had all the symptoms of a possible malignancy. An attempt was made to take out the cyst with a large mastoid curet. The mass was found to be hard, and proved to be an odontoma. I saw this patient, June 8, 1923, and apparently there was nothing further wrong with her. The point I want to bring out is that we cannot depend too much on the laboratory findings alone. Two laboratories reported giant cells, and Stanford Medical School reported benign odontoma.

DR. ROBERT H. IVY, Philadelphia: I have seen three cases of this disease, involving the mandible in every case. In one of them the diagnosis was easy because the patient had been a sufferer for some years from the generalized form of the disease. In the two other cases the lesions were entirely limited to the mandible. Here the question of diagnosis is important, and probably the commonest conditions to be differentiated are adamantinoma and some form of dental cyst. In the latter, one important point in diagnosis is some abnormality of the teeth. In osteitis fibrosa there is no interference by the disease with the eruption of pulp vitality of the teeth. The roentgen ray will show the typical appearance that Dr. Potts showed of a localized rarefaction of the bone with new bone formation within the rarefied area. In one of the cases we had to treat there was a localized tumor in the mandible below the molars which we thought at the time was a dental tumor. I opened it by an external incision, and removed all of the softened diseased tissue without severing the continuity of the jaw. Histologic examination showed fibrous tissue with new bone formation and no epithelial elements. There was no recurrence, and later the external deformity was corrected by a plastic operation.

DR. HERBERT A. POTTS, CHICAGO: I want to say something in defense of the pathologists. If the pathologist is going to help us, we must help him. It is beyond the power of anybody to send a heterogeneous mass of tissue to the pathologist and expect to get a reliable answer from him. We should remember that he is dealing with cells, and we have cells all over the body, similar and dissimilar. He knows, so far as the specimen is concerned, only the dead pathologic condition. The operator has to know the living pathologic condition or at least have some idea of the clinical facts and appearance at the time of operation. In fact, I think that a piece of tissue sent to a pathologist should contain a summary of the clinical history of that case, and then connect that with the case as we see it. We must not malign the pathologist. We must pity him, and he is to be pitied because of some of the things that are required of him. In regard to the cases spoken of by Dr. Novitzky, there was no evidence in these cases of infection, no pus and no cartilage, nothing to lead us to believe that the tumors were of an inflammatory nature. A giant cell sarcoma—anything with sarcoma attached to it—is destructive to life. That is not true of the giant cell sarcoma, which is a misnomer when applied to most jaw tumors containing giant cells. The giant cell sarcoma is not a sarcoma, and consequently we should not get frightened. We have giant cells almost anywhere that one can implant a silk ligature, and the giant cell sarcoma does not follow; consequently, the tumors should be handled conservatively, and the patient will get well. In this paper the treatment of this case has been omitted. We will continue to do what seems to be the best thing to do as time goes on. I will say that, in general, the treatment of bony tumors by the roentgen ray has not been satisfactory.

A MODIFIED RIB-RESECTION OPERATION FOR EMPYEMA

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NEW YORK

Numerous articles have appeared in the literature since the war giving arguments pro and con regarding the open and closed methods of treating empyema. The report of the United States Empyema Commission gives very definite facts and data as to the best methods of treating empyema. Its work is conclusive, and has thrown much new light on the subject. Ashhurst [1] says that the conclusion of the empyema commission and the consensus of clinical experience as far as treatment is concerned may be summed up as follows: (*a*) cases of pleural effusion suspected of being purulent should be aspirated, and if the effusion is massive, most of it should be removed by aspiration one or two days before resection of the rib is undertaken; (*b*) if the fluid found on puncture is serous or seropurulent, resection usually may be postponed until frank pus has formed, as the delay will permit the formation of firm adhesions,

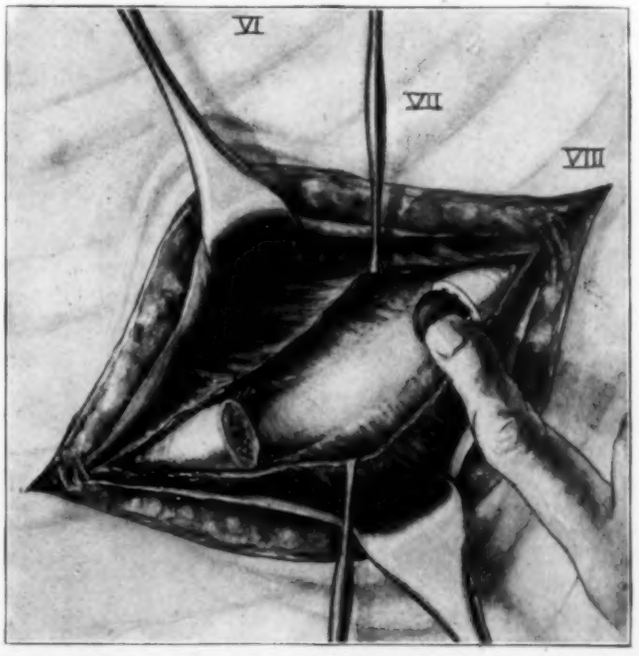

Fig. 1.—Cut ends of rib: The muscle is retracted, and both cut ends are sealed with bone-wax.

1. Ashhurst, A. P. C.: Observations on Empyema, Ann. Surg. **72**: 12 (July) 1920.

and thus prevent complete collapse of the lung when the empyema is opened. Resection of a rib is necessary for proper drainage. The empyema commission [2] emphasizes the value of antiseptics, especially surgical solution of chlorinated soda, in the sterilization of the cavity.

The adherents of the closed method of treating empyema have always advised against the resection of a rib, and one of their main arguments has been the fact that in about 4 per cent. of the cases, osteomyelitis of the rib occurs, which delays convalescence and necessitates a secondary operation. In this respect, they are right. Brown,[3] in a review of 171 cases of empyema at the Children's Hospital of Philadelphia, found that a secondary operation for osteomyelitis was necessary in 4 per cent. of the cases. Eggers [4] reviewed 192 cases of long-standing empyema, which represented a large part of the empyema residue of the United States army. In a large number of these cases, the chronicity of the illness was due to necrosis of the rib, which

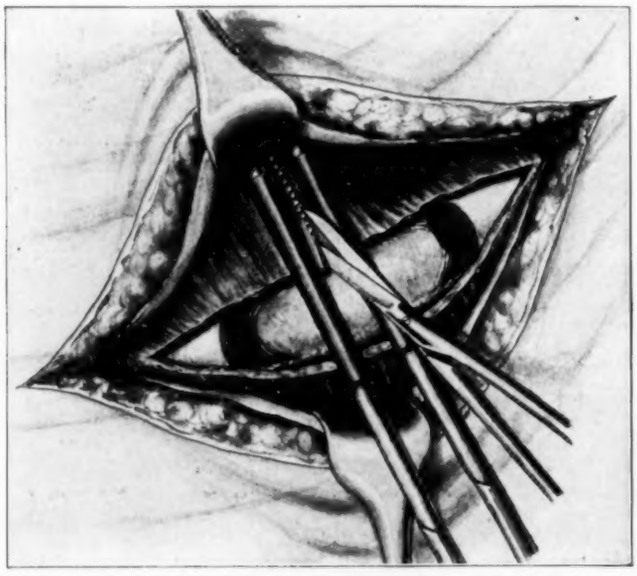

Fig. 2.—The open ends of the bone have been sealed up with bone-wax; two clamps are applied to the muscle above, and the muscle is divided between clamps.

caused long-standing elevation of temperature and a discharging sinus, and which was cured only by a secondary operation for excision of the necrotic rib.

I have often wondered why more cases of rib necrosis did not occur, when I have seen the open marrow ends of the cut rib constantly bathed in pus. The open marrow cavity of the cut rib is an open avenue for sepsis and osteomyelitis. One of the first principles of surgery is to protect exposed surfaces from contamination, and still no attempt seems to be made to protect the open rib from infection. It is a well known fact that the marrow cavity of a bone is easily infected, and these infections are extremely virulent, giving rise to long-standing fever, necrosis of the bone, sequestrum formation, sepsis, with its resulting anemia, and even death. The rib becomes necrotic through continuity of infection when no attempt is made to seal up the open ends of the cut rib. Every surgeon has had innumerable cases in which after resection of a rib for empyema, the patient continues to have a temperature higher than normal, with a progressive anemia, and the roentgen-ray examination shows the chest to be clear; but if the finger is inserted into the chest, the sharp ends of the necrotic ribs can be felt as the offending factor.

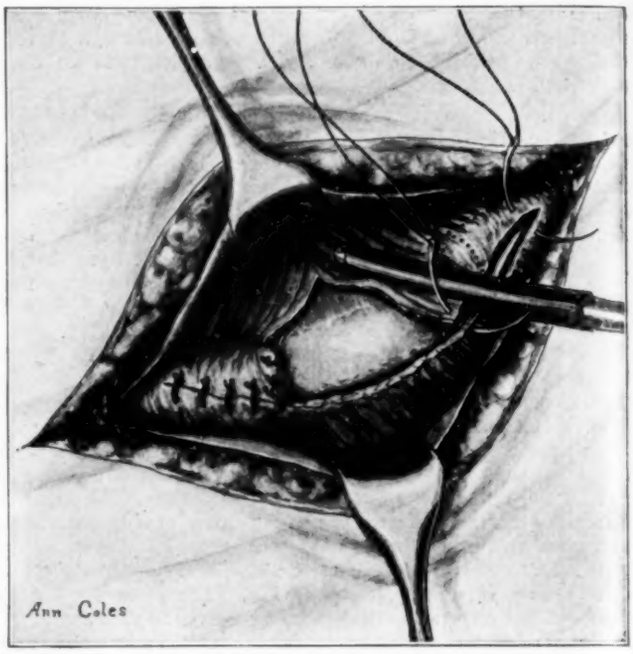

Fig. 3.—The muscle is brought down and sewed over the open end of the bone, completely burying the bone.

With the idea in mind of sealing up the open ends of the resected ribs, so as to prevent their being constantly bathed in pus, and being an open avenue for an osteomyelitis or a sepsis, I have modified the old time-honored rib resection operation.

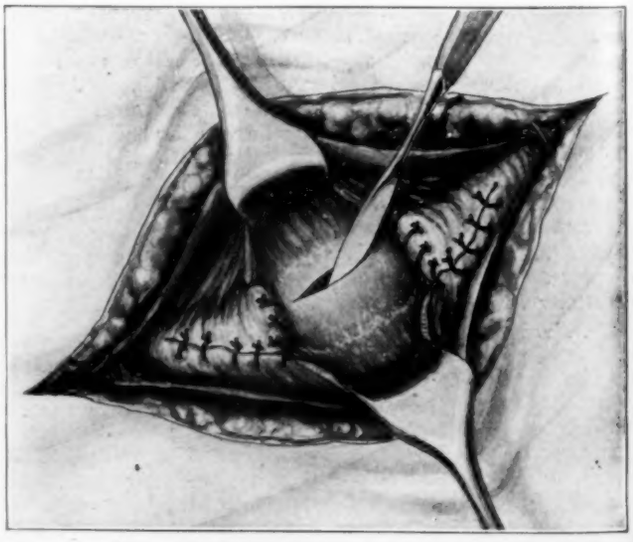

Fig. 4.—The bone has been entirely covered by the muscle flaps, and the pleura is now opened.

In the last three months I have had the opportunity of performing this operation four times. All the patients had a smooth convalescence and all are now perfectly well. So satisfactory have been the results that I shall in the future use this technic in all cases of empyema.

2. The Empyema Commission: Cases of Empyema at Camp Lee, Va., J. A. M. A. **71**: 366 (Aug. 3), 443 (Aug. 10) 1918.
3. Brown, H. P., Jr.: Empyema Thoracis, Ann. Surg. **77**: 401 (April) 1923.
4. Eggers, C.: Chronic Empyema, Ann. Surg. **77**: 142 (Feb.) 1923.

TECHNIC

Under local anesthesia, the incision is made over the rib to be resected, until the muscle is reached. If this is the eighth rib, the latissimus dorsi muscle is encountered, which is split and retracted. The periosteum is then incised and separated from the rib, and about 2½ inches (6.3 cm.) of rib is removed with the costotome. Care must be taken that the periosteum is not separated too far away from the cut edge of the bone, as the periosteum nourishes the bone, and if too much periosteum is removed, the end of the bone may become necrotic through loss of circulation. I now seal up the open ends of the cut rib with bone wax, as shown in the diagrams. I then put two clamps on the latissimus dorsi muscle, cut between the clamps, and turn the muscle flaps down to cover the open ends of the bone. The muscle is sutured to the muscle below so that the bone is entirely covered and cannot be seen. The open ends of the bone have thus been doubly protected and cannot become necrotic by continuity of the infection. The pleura is then opened, the suction apparatus introduced, the pus slowly removed and, when the pleural cavity is dry, a rubber tube is inserted and the skin closed in the usual way with silkworm-gut sutures.

CONCLUSIONS

1. To secure proper drainage in empyema, rib resection is necessary.

2. Osteomyelitis of the rib occurs in 4 per cent. of the cases, resulting in long-standing fevers, anemia and protracted convalescence, and requiring a secondary operation for a cure.

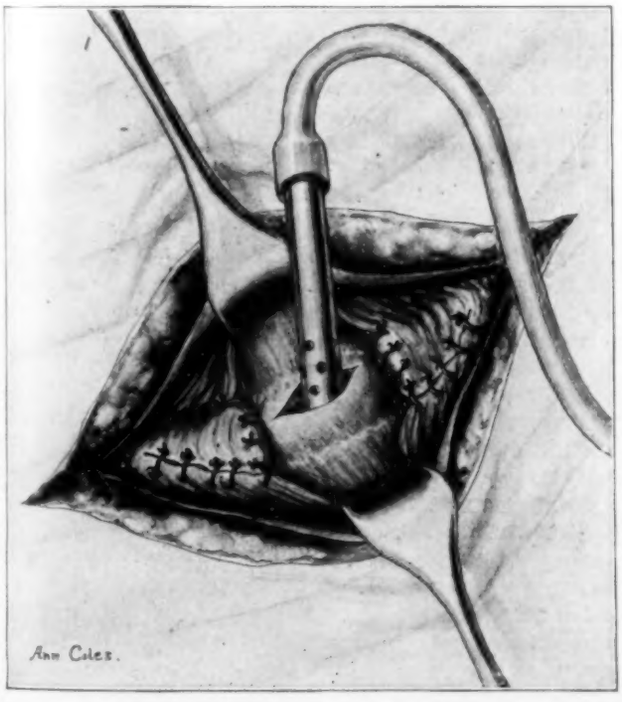

Fig. 5.—The suction apparatus is now introduced and the pus slowly evacuated.

3. The reason why necrosis of the rib occurs is that the open ends of the rib are exposed, are constantly being bathed in pus, and are involved by continuity of the infection.

4. Heretofore, no means has been devised of sealing up these open ends to prevent contamination, thus closing up an avenue of infection that gives rise to a general sepsis.

5. The operation is very simple and takes only a minute more than the usual procedure. It entirely removes the 4 per cent. chance of a rib necrosis and reoperation, and may save months in convalescence.

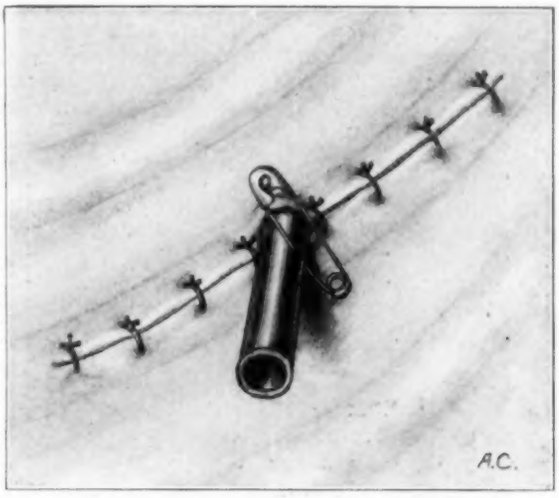

Fig. 6.—A rubber tube is inserted and the skin closed with silkworm sutures.

6. The bone-wax seals up the end of the open rib, and the muscle flap gives added protection.

143 East Twenty-First Street.

PECULIAR REACTIONS BETWEEN THE FIFTH AND SEVENTH CRANIAL NERVES

W. T. COUGHLIN, M.D.
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ST. LOUIS

Paralysis of the muscles of expression of the same side of the face is a not uncommon sequel of section of the root of the fifth cranial nerve, also of ganglionectomy as practiced for the cure of major trigeminal neuralgia, and it has occurred frequently as a sequel of deep alcohol injections. Although sometimes this paralysis is very marked, it fortunately seems to be always temporary; its occurrence, therefore, from a practical standpoint, is a matter not worth much consideration.

Various theories have been put forward to account for the paralysis, but it must be understood that so far they are still theories, as its cause is not definitely known. It is thought by some to be due to an error in technic; that in some way the seventh nerve is injured during the operation. In the days when it was customary to cut the zygoma and pull down the masseter, such a theory was tenable; but the condition occurs in cases in which the incision does not extend below the zygoma, and in which the zygoma is not resected.

The theory that it is due to interference with the great superficial petrosal nerve was advanced by Hutchinson. This nerve is about the size of an ordinary cotton thread. It arises from the geniculate ganglion of the facial nerve, and passes forward and inward through a canal in the petrous bone. It makes its exit through the hiatus fallopii on the anterior surface near

the apex; it then adheres to the external surface of the dura, and, passing inward behind the gasserian ganglion, leaves the skull by traversing the cartilage filling the foramen lacerum medium. Here it joins the great deep petrosal, which comes from the carotid plexus, and the two unite to form the vidian nerve. Its fibers are motor, secretory and sensory. I cannot understand how an injury to this nerve—the great superficial petrosal—could cause a facial palsy. The theory has been advanced that blood from the site of operation percolates back along the nerve to reach the geniculate ganglion and causes pressure on it. There is no room for blood to so pass alongside the nerve, as the nerve alone or accompanied by a small artery (petrosal) completely fills the canal through which it travels.

Fig. 1.—Spasm of the facial muscles following section of the sensory root of the fifth nerve; preservation of the motor root: *A*, patient trying to raise eyebrows shows inability to raise right one, probably because of pulling on branch to frontalis with retractor; *B*, patient closing eyes; right closes even more tightly than left; deep furrows from wing of nose to angle of mouth and beyond; marked herpes of upper lip.

Why some one has not suggested interference with the blood supply of the geniculate ganglion as a cause is rather strange. There is a small branch of the middle meningeal artery (petrosal) which goes to the geniculate ganglion, either along the canal traveled by the great superficial petrosal nerve or else along that of the small superficial petrosal nerve. This petrosal branch of the middle meningeal nerve anastomoses at the geniculate ganglion with a twig from the stylomastoid branch of the occipital nerve. If the latter twig were smaller than normal, or if, perchance, it did not happen to reach the geniculate ganglion at all, and the petrosal branch of the middle meningeal nerve were injured—as I believe it almost always is in this operation—then we might expect a paralysis of the facial muscle. Furthermore, we might expect this palsy to appear soon after the petrosal branch was broken. But the palsy does not always appear at once; it may not appear until five days after the operation.

Another theory ascribes as a cause the disturbance of cells in the pontile nucleus of the seventh nerve, due to the avulsion (intentional or accidental) of the root of the fifth or of some of its fibers. If this is so, why is not the sixth nerve affected? Or the fourth? And what about the hypoglossal nerve, to which I shall refer directly? Also how about the facial paralysis after deep alcohol injections? In many cases there is only a slight weakness of the muscles of expression; in others, the paralysis is total.

I just now referred to the hypoglossal nerve. In many there is an accompanying weakness of the same side of the tongue. When it is protruded, the tongue deviates slightly, its tip turning toward the operated side. In some patients this tongue deviation is more marked, but in all that I have so far examined, the tongue, by special effort, could be turned away from the operated side, showing that the paralysis was not total.

I believe that whatever the cause of this paralysis is, it is identical for both face and tongue. Is it possible that the same cause operating can produce no symptoms in one case; a slight facial weakness in another, and a complete paralysis in a third? Is it possible that the simple cutting of the root, or ganglionectomy, or alcohol injection, by depriving the same side of the face and tongue of ingoing stimuli, so lowers the tonus of the underlying muscles that they sometimes fail to respond well or in certain cases do not respond at all? All are familiar with the operation of spinal root cutting for spastic paraplegia. Undoubtedly, the tonus of the spastic muscles is lowered by that operation. The ingoing stimuli from the region of the spastic muscles are excluded.

So much for the paralysis and its cause; but how explain spasm of the facial muscles of the same side following section of the sensory root only of the fifth nerve?

REPORT OF CASES

CASE 1.—Mrs. M., aged 78, seen in September, 1922, complained of major trigeminal neuralgia. It began on the left side twenty years before; on the right side, five years before. The pain on the right side was now very severe. The patient had alcohol injections in both sides "many times" in the last twelve years. The sensory root was cut on the right side; the motor root was preserved. As soon as the sensory fibers were cut, the patient's mouth was drawn to the right side (Fig. 1). The spasm continued during the fifteen days that the patient was in the hospital. Herpes of the upper lip and inner canthus developed on the sixth day. The spasm was noticeable even during sleep, but was more marked when the patient attempted to use the facial muscles; the tongue deviated toward the operated side.

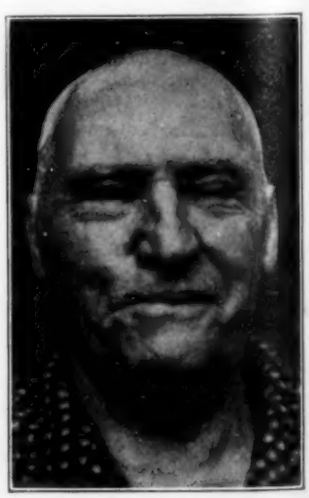

Fig. 2.—The paralysis is sometimes so slight as to escape notice altogether. Mr. G. C. G. was operated on in January, 1922, right side middle division being involved. There was weakness of the right upper lip, which could be noticed only on bringing other muscles into play. The motor root was not saved.

Another point of interest is that in no case of root section in which I am satisfied that I have preserved the motor root (five cases) have I had a weakness of the corresponding seventh nerve; on the contrary, four out of the five have had noticeable spasm of the same side of the face. In none, however, has it been so marked as in Case 1. In all it has been present at the conclusion of the operation.

In addition, the spasm is evanescent, the most marked disappearing in about six weeks; in one patient it disappeared in two days. I saw Patient 1 eight months after operation, and could detect no difference between the two sides. As there had been no muscle atrophy, it is certain that I have saved the motor root. I know of no satisfactory explanation for such spasms.

Case 2 shows that a corresponding paralysis of unknown origin of the fifth nerve can accompany a paralysis of the seventh nerve as a consequence of mastoid operation. The case is the first of the kind I have heard of. It occurred in the service of Dr. H. W. Lyman, of the Department of Otology of Washington University Medical School, who has given me permission to publish this report.

Paralysis of the fifth and seventh nerves following a radical mastoid operation.

CASE 2.—Miss C., aged 18, with a suppurating ear for ten years, had a radical mastoid operation performed, Oct. 14, 1922. At the close of the operation, the corneal reflex was present, showing that the seventh nerve had not been injured. The morning of October 17 (over sixty hours after the operation), the patient complained of irritation of the right eye and continuous lacrimation; in the afternoon of the same day (seventy-two hours after the operation), a weakness of the muscles of the right side of the face was discovered, and the patient complained of a peculiar sensation on that side of the face. A rough sensory test showed diminution of sensation to pain over the area approximating the distribution of the fifth nerve. Anesthesia of the right cornea was also demonstrated. The pupillary reflex was normal.

October 28, the facial anesthesia had disappeared, except that the right cornea was less sensitive than the left. The facial (seventh) paralysis cleared up several weeks later. There was no rise of temperature during this time. The Wassermann reaction was negative; the personal history was negative, and there was no history of any nervous disease in the family.

As remarked in the opening paragraphs, the question is of scientific rather than practical interest (as far as our present knowledge goes). There is not much under the heading of neuralgia in the literature that helps to a solution of the perplexing phenomena referred to here.

REPAIR IN HYDRONEPHROSIS

WITH REFERENCE PARTICULARLY TO EARLY AND LATE CHANGES AFTER RELIEF OF BRIEF OBSTRUCTIONS WHEN OPPOSITE KIDNEY IS NOT DISTURBED *

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SAN FRANCISCO
AND
O. W. BUTLER, M.D.
LOS ANGELES

The power of accurate determination of the reserve or repair ability of a hydronephrotic kidney is of considerable clinical importance. In hydronephrosis following incomplete obstruction, the most frequent clinical type, estimation of the damage as determined by the usual functional tests is often deceptive and unsatisfactory. With complete obstructions, the only trustworthy guide is the accuracy of our knowledge by clinical observation of how many days the total obstruction has existed; and with either type the evidence of repair, whether good or bad, as first found on relief of obstructions, may be totally different in degree and kind in the course of several years afterward.

The significance of the difference in the early and late changes following relief of obstructions of equal duration, when the opposite kidney is undisturbed, has been emphasized by one of us [1] in several previous publications, and is best understood in comparison with the repair changes of similar experiments to which either the opposite kidney is totally removed at the time of the repair procedure or is gradually removed by some progressive injury, such as partial obstruction of its ureter. In the first place, the repair kidney is suddenly called on to do total function; in the second, the demand comes gradually.

Experimentally, it has been determined that fourteen days is about the limit of complete obstruction compatible with life after opposite nephrectomy, but that even a thirty-day complete hydronephrosis will recover total function when the shift of the burden has been gradual.

Both the fourteen and the thirty day hydronephrosis under these different circumstances eventually do the work of total function about as efficiently as a normal kidney does after compensatory hypertrophy following opposite nephrectomy, and are experimental examples of the remarkable power of hypertrophy of renal tissue.

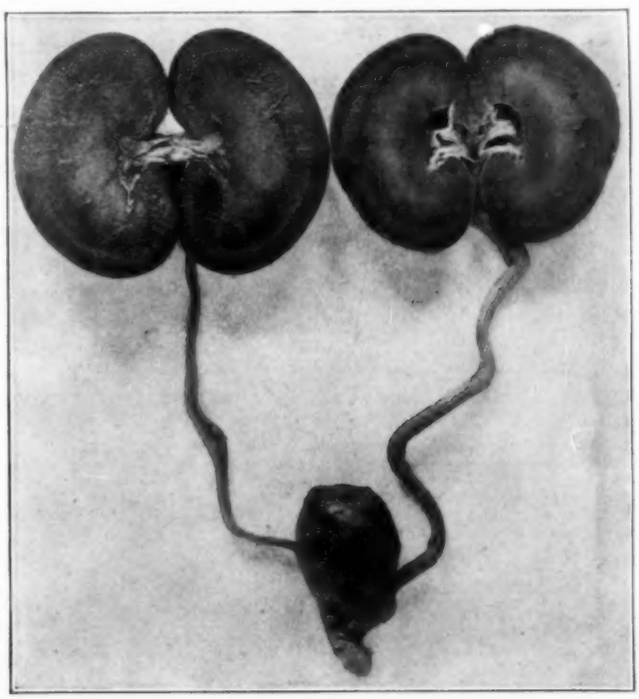

Fig. 1.—Complete left ureteral obstruction at bladder: After seven days' obstructive period, ureterocystoneostomy was performed; result after a repair period of twenty-four days (operated side on the right).

That this power manifests itself as a measure of necessity only is exemplified by the experiments of this paper, in which the opposite kidney is not injured or removed. In fact, a comparison of the repair kidney of Experiment 2, a thirty day hydronephrosis, and a twenty-four day repair, and of Experiment 3, a twenty-one day hydronephrosis and a 249 day repair, shows a change quite the opposite of a hypertrophy, namely, a marked renal atrophy.

The nature of this atrophy is of interest. Rautenberg [2] has said that hydronephrotic atrophy is a pro-

* Read before the Section on Urology at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.
* From the Urological Department of the University of California Medical School, and Hooper Foundation for Medical Research, San Francisco.

1. Hinman, Frank: Renal Counterbalance: An Experimental and Clinical Study with Reference to the Significance of Disuse Atrophy, J. Urol. **60**: 289 (April) 1923; Experimental Hydronephrosis: Significance of Compensatory Hypertrophy and Disuse Atrophy to Repair, J. A. M. A. **80**: 315-319 (Feb. 3) 1923.
2. Rautenberg, E.: Die Folgen des zeitweiligen Ureterverschlusses, Mitt. a. d. Grenzgeb. d. Med. u. Chir. **16**: 431, 1906.

gressive degeneration like nephritis, and while relief of obstruction may give temporary repair, the eventual condition is renal destruction. Johnson [3] has raised the same question of the functional recovery of hydronephrosis if the opposite compensatory kidney is not removed, and it is in confirmation of the necessity of the stimulus of compulsory function for hydronephrotic repair and hypertrophy that the present paper is presented.

EXPERIMENTAL FINDINGS

Dogs were used in the experiments, and were operated on under ether anesthesia and complete surgical asepsis. At the first operation, the left ureter was doubly ligated as near the bladder as possible, and cut between the ligatures. At the second operation, seven, fourteen, twenty-one, or twenty-eight days later, the dilated ureter was transplanted to the bladder, the simplest method possible being used. The open, dilated ureter was passed through a small incision in the posterior bladder wall and anchored, care being taken to allow no leakage of urine and no kinking of the ureter. Recovery followed promptly, with the exception of one dog, which died three days after the second operation. Five of the animals, with seven, fourteen, fourteen, twenty-one and twenty-eight days of complete ureteral obstruction, respectively, were given a drainage period each of twenty-four days, and were then killed. Two dogs with a fourteen and twenty-one day hydronephrosis, respectively, were each allowed a 249 day repair period.

Many factors other than time enter into the question of repair, of which infection and a poor surgical result are the most important. If infection leading to pyelonephritis or pyonephrosis occurs, very little repair takes place; and if the obstruction is not totally removed or the anastomosis does not function properly, a partial obstruction results, and the repair cannot be complete

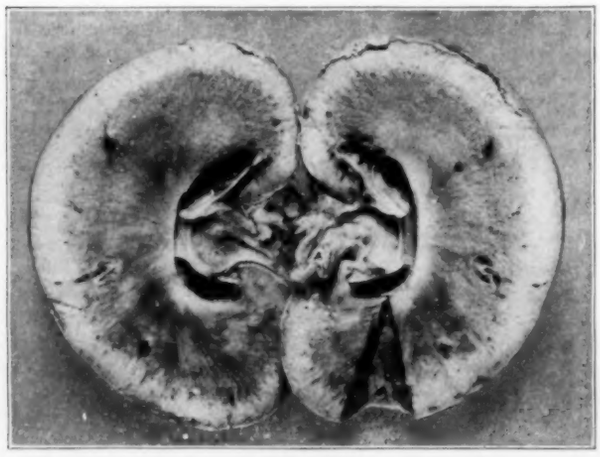

Fig. 2.—Hydronephrosis that results after complete ureteral obstruction for seven days; comparison with Figure 1 shows the recovery that takes place after twenty-four days of repair.

even if the obstruction originally was of short duration. The following three experiments exemplify results, uninfluenced by either of these two factors:

EXPERIMENT 1.—In a dog weighing 19 pounds (8.6 kg.), there was complete obstruction of the ureter for seven days. After a ureterocystoneostomy, and a repair period of twenty-four days, the seven day hydronephrosis returned in twenty-four days to practically the appearance of a normal kidney. Grossly, there is still a slight dilatation of the pelvis and ureter (Fig. 1). Microscopically, other than a number of small focal intertubular accumulations of lymphocytes and plasma cells, the appearance was normal. Figure 2 shows a simple hydronephrosis of seven days, for comparison.

EXPERIMENT 2.—In a dog weighing 18½ pounds (8.4 kg.), there was a complete obstruction of the ureter for twenty-eight days. After a ureterocystoneostomy, there was a repair

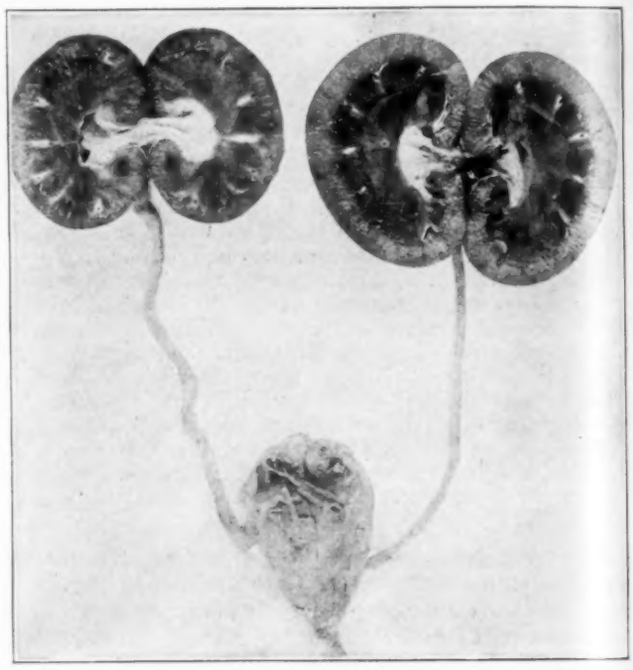

Fig. 3.—Complete left ureteral obstruction at bladder: After twenty-eight days' obstructive period, ureterocystoneostomy was performed; result after a repair period of twenty-four days (operated side on the left).

period of twenty-four days. The urine showed a few hyaline and granular casts, with an occasional pus cell. At necropsy, there was no constriction at the site of the anastomosis. The repair kidney appeared somewhat smaller than the opposite normal kidney. The capsule was shrunken and the superficial veins were more prominent (Fig. 3). A simple hydronephrosis of twenty-eight days' duration is shown in Figure 4 for comparison. On section, a moderate dilatation of the renal pelvis was manifest, and the ureter remained dilated to about the same degree as was found at the second operation. Histologic study showed evidence of hydronephrotic atrophy; the tubules, particularly those just beneath the capsule, had a tendency to be flattened, and to run parallel to the surface of the kidney. In a number of places there was a rather marked focal fibrosis and infiltration with lymphocytes and plasma cells. The glomeruli varied considerably in size. Some were slightly larger than normal, while others, particularly those in the scarred areas, were small. Gross and microscopic examination showed pathologic changes, but preservation of renal tissue was remarkable in view of the degree of destruction at the time of repair, and probably would even have been sufficient to maintain life had the opposite kidney been removed.

The degree of restoration within twenty-four days of a seven and twenty-eight day hydronephrosis promises well for a longer period of repair, provided the improvement is progressive. But it must be remembered that these repair kidneys work in partnership with not only a healthy, but a compensatory, kidney, and will therefore lack progressive stimulation. The capability of the compensatory kidney is such as to leave less and less for the repair side to do. In place

3 Johnson, R. A.: Renal Function in Hydronephrosis, J. Exper. Med. **28**: 193 (Aug.) 1918.

of improvement with time, the repair side will undergo a degeneration which is of the nature of a disuse atrophy. Experiment 3 is a good example of such a disuse atrophy.

EXPERIMENT 3.—In a dog weighing 20 pounds (9 kg.), there was a complete obstruction of the left ureter for twenty-one days. After a ureterocystoneostomy, and a drainage period of 249 days, the urine was free from bacteria and pus. The dog was killed, under ether, with preliminary functional study. The appearance time of phenolsulphonephthalein was four minutes for the right kidney, and eight minutes for the left. In the first fifteen minutes, 25 per cent. of the dye was excreted by the right kidney, and 5 per cent. by the left; in the second fifteen minutes, 20 per cent. by the right kidney and 2.5 per cent. by the left, the total excretion for the first half hour being 45 per cent. for the right kidney and 7.5 per cent. for the left. At necropsy, the left kidney weighed 15 gm.; the right, 48 gm. The ureter was freely patent. There was no pelvic dilatation on section, and no evidence of infection. Figure 5 shows that the left kidney is reduced to one-third its size, and that even in the gross, cortical atrophy is quite marked.

SUMMARY

A hydronephrosis of seven days' duration from total ureteral obstruction returns anatomically and functionally to about normal. The recovery is more prompt if the opposite kidney is removed or so diseased that it is incapable of complete function. The recovery of a hydronephrosis of from fourteen to twenty-eight days' duration requires the stimulus of compulsory function which in the longer period must be gradually and not suddenly applied. If left in partnership with the normal kidney, which meanwhile has undergone compensatory hypertrophy, atrophy will replace the initial repair, an atrophy of the nature of a disuse atrophy, even in the case of hydronephrosis of shorter duration.

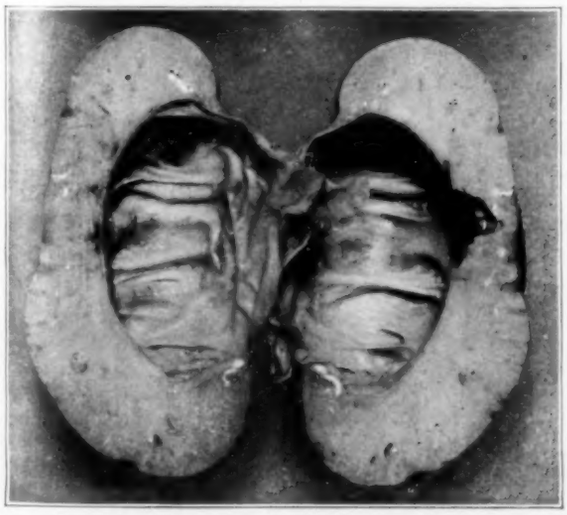

Fig. 4.—Hydronephrosis that results after complete ureteral obstruction for twenty-eight days; comparison with Figure 3 shows the recovery that takes place after twenty-four days of repair.

CONCLUSION

1. There is considerable initial recovery of function and repair hypertrophy of a kidney after relief up to twenty-eight days of total obstruction.

2. This recovery, even after shorter periods of obstruction (fourteen days), is temporary if the healthy kidney is undisturbed, and in the course of several months an atrophy of the nature of a disuse atrophy replaces it.

ABSTRACT OF DISCUSSION

DR. ALBERT E. GOLDSTEIN, Baltimore: One question that I asked Dr. Butler has not been answered conclusively. In the presence of a hydronephrosis that is uninfected, should we perform a nephrectomy, if a small percentage of phenolsulphonephthalein is being excreted? Are we justified in removing that kidney, or shall we, if a stricture is present, dilate the stricture in the hope that the kidney will return to function? Certainly in the noninfected cases I feel as if we should not be too radical. Experiments of others have apparently proved the fact that eventually it will have to come out because it will finally be so destroyed that it will be of no use. At present I have several cases of hydronephrosis in which there are strictures of the ureter. Should I go on treating these patients, dilating the ureter, or should I perform a nephrectomy?

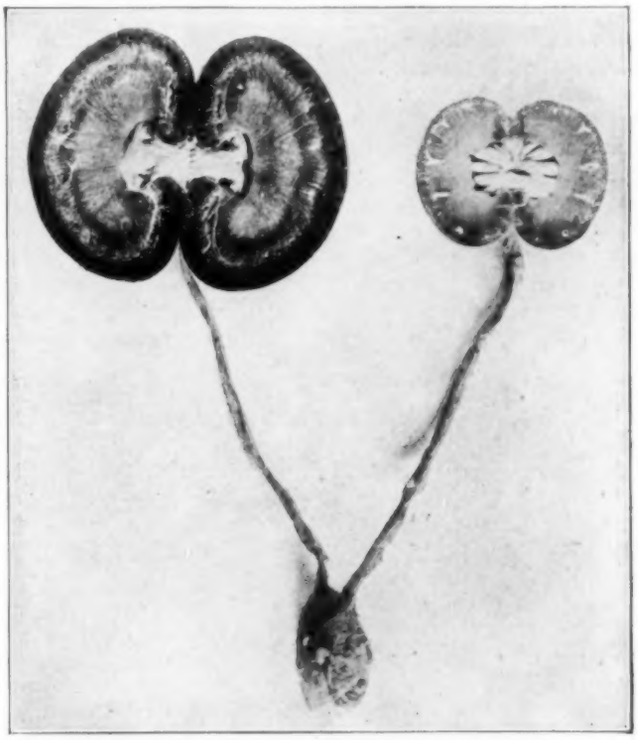

Fig. 5.—Complete left ureteral obstruction at bladder: After twenty-one days' obstructive period, ureterocystoneostomy was performed; result after a repair period of 249 days; urine free from pus and bacteria; phenolsulphonephthalein, right kidney, 45 per cent.; left kidney, 7 per cent. (operated side on the right).

DR. O. W. BUTLER, Los Angeles: Experimentally, this work tends to prove that if the kidney has been damaged to the extent that the phenolsulphonephthalein output is very low, it is useless to put that kidney back into competition with the opposite kidney if compensatory hypertrophy has taken place. We believe that it is better to do a nephrectomy rather than to attempt repair, provided the other kidney is healthy and fully compensating.

Infrequency of Tabes Dorsalis in Siam.—It may safely be estimated that between 80 and 90 per cent. of the male population in the cities suffer from venereal infection at some time, and only to a less degree in the country. Certainly more than half the females become infected before they reach the age of 21. We find eye complications that vary all the way from complete blindness to slight visual incapacitation. Sterility, invalidity of various degrees and kinds and the other venereal complexities, primary, secondary and tertiary, are common. Of many thousands of patients examined during the last five years, only two cases of tabes dorsalis have been recognized.—R. W. Mendelson: *Am. J. Pub. Health* **13**:830 (Oct.) 1923.

FASCIAE OF THE UROGENITAL TRIANGLE *

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SAN FRANCISCO

Before proceeding to a discussion of the anatomy of the perineum, it is interesting to note that the pure anatomist has no counterpart for some of the terms used by the surgeon. Denonvilliers' fascia, the recto-urethralis muscle, Buck's fascia and Colles' fascia are surgical terms used to designate conveniently certain anatomic landmarks which to the anatomist are not definite structures. The lack of liaison between the dissecting room and the operating amphitheater is responsible for much of our inaccurate knowledge and bizarre perineal surgery.

Probably because of the hardened fasciae in embalmed bodies, there is a tendency for the dissector to consider the urogenital diaphragm as the keystone of the perineum, the other structures being formed secondarily, and to discredit all theories that do not

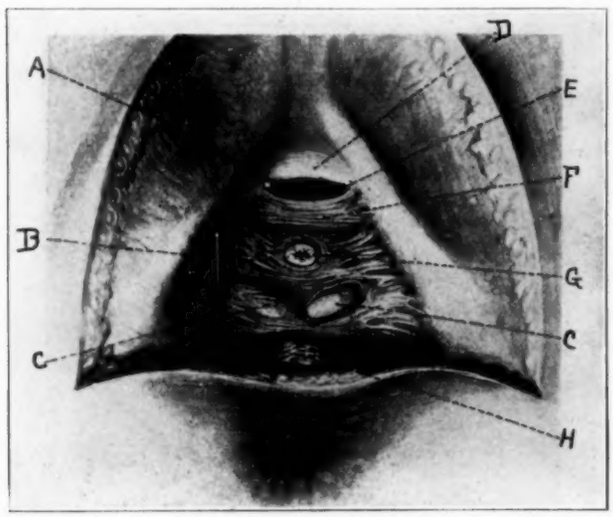

Fig. 1.—The distal layer of the urogenital diaphragm: *A*, dorsal vein of penis; *B*, urogenital diaphragm; *C*, Cowper's gland; *D*, arcuate ligament; *E*, internal pudic artery; *F*, transverse pelvic ligament; *G*, membranous urethra; *H*, anal sphincter (Tandler).

presuppose the presence of a primary rigid double walled triangular membrane perforated by the urethra. This is largely an assumption which the embryologic facts as shown in the preparation and study of the fetal pelvis to be described do not warrant, and the urogenital diaphragm is to be regarded rather as an after-development to the urethra, muscles and other structures, and derived essentially from a condensation of loose mesenchymal tissue. To this fact, and to the consideration of the anatomy of the fascia of the perineum as well as the pathologic significance of the endopelvic fascia, particularly as related to extravasation, this article is largely devoted.

MATERIAL AND METHODS

This investigation has been confined to the male perineum. The gross material used consisted of frozen cross sections and of dissections of preserved and fresh cadavers, some of which were first injected with colored fluids through an endoscope, thereby simulating extravasations of urine from a ruptured urethra. In addition, serial sections of human embryos of various stages of development were studied. A glass model was constructed of the pelvis of a term fetus cut transversely in sections 100 microns thick (Specimen 2409, Carnegie Institute of Embryology). With the aid of an Edinger projection apparatus, the important structures were traced directly on glass plates by means of various colored inks. Distortion of the model was prevented by keeping the magnification in proportion to the ratio between the thickness of the sections and that of the plates. The glass plates were then stacked, divided into packs about 4 inches thick, bound firmly with adhesive plaster, and mounted in a frame with electric lights behind, so as to give a transparent presentation of the entire region.

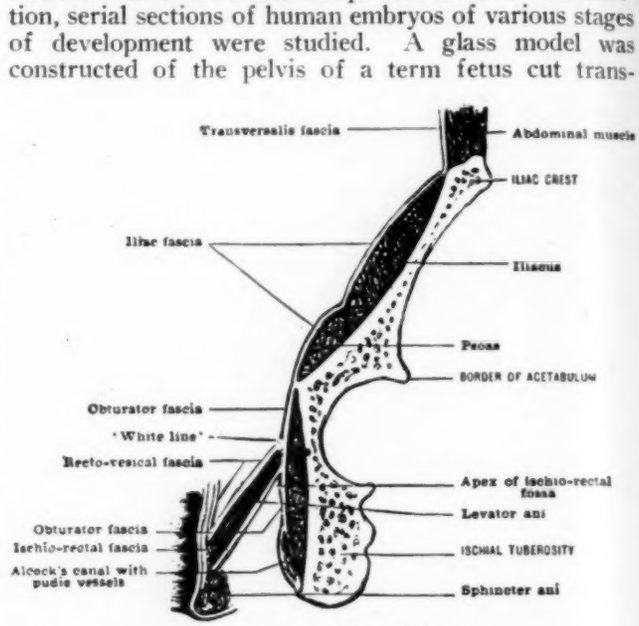

Fig. 2.—Diagram of the pelvic fascia.

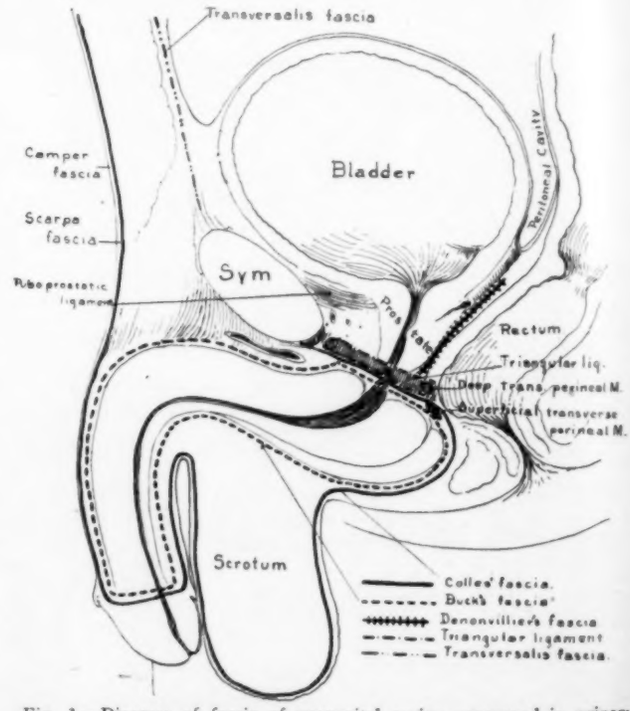

Fig. 3.—Diagram of fascia of urogenital region concerned in urinary extravasations.

* From the George Williams Hooper Foundation for Medical Research and the Department of Urology, University of California Medical School.
* Read before the Section on Urology at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

PELVIC AND PERINEAL FASCIAE

For descriptive purposes, the pelvic and perineal fasciae may be briefly considered as follows:

The pelvic outlet is divided into an ischiorectal region and a urogenital triangle. The latter has the symphysis pubis in front, the ischiopubic rami as far back as the anterior portion of the tuberosities on the sides, and an imaginary line joining the two behind. It is closed by the urogenital diaphragm, which is generally considered as consisting of proximal and distal fascial layers (Fig. 1). The anterior borders fuse and constitute the transverse perineal ligament, separated by the dorsal vein of the penis from the subpubic or arcuate ligament, which occupies the arch of the pubes. The lateral borders of the urogenital diaphragm are attached to the sides of the pubic arch; its superficial and deep surfaces are associated with contiguous muscles,[1] and its base is formed by the deep transverse perineal muscles. The superficial and deep layers of the urogenital diaphragm may blend so as to appear

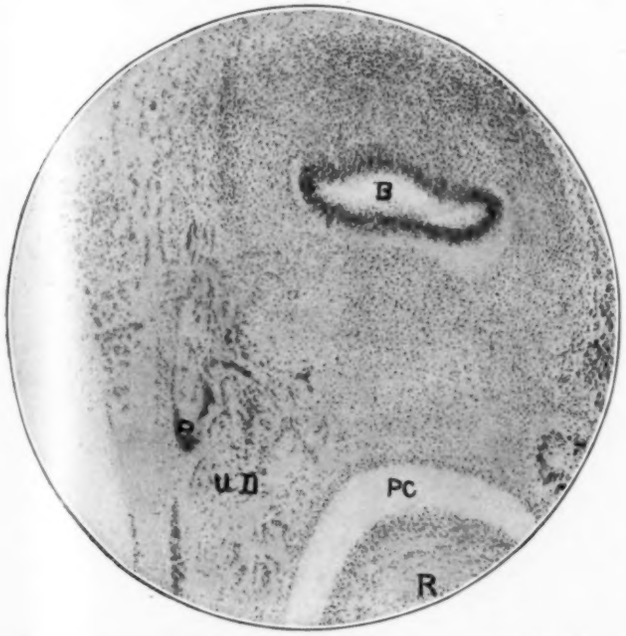

Fig. 4.—Transverse section through pelvis of 26 millimeter human embryo, showing site of urogenital diaphragm: *B*, bladder; *P C*, peritoneal cavity; *R*, rectum, *U D*, urogenital diaphragm; *P*, pudic artery (embryo, Carnegie Institute 782, slide 92, row 2, section 2).

as a heavy one-layer fascia that splits to enclose the muscle structures and the pudic vessels. According to Delbet,[2] there is no deep layer of the triangular ligament. Deaver[3] suggested calling it the forward continuation of the anal fascia. Smith[4] thinks it is the aponeurosis of the levator ani. Cunningham[5] calls it the parietal layer of the pelvic fascia. Stoney[6] states that it is an extension of the visceral layer, while Campbell[7] considers it a prolongation of the obturator fascia across the pubic arch. Undoubtedly, the urogenital diaphragm consists of extensions of both parietal and pelvic fascia.

The rectovesical fascia covers the upper surface of the levator ani muscle and is an extension of the pelvic fascia (Fig. 2), which, though ending in name at the white line, in reality continues downward and at a slightly lower level again splits into two layers, one, the

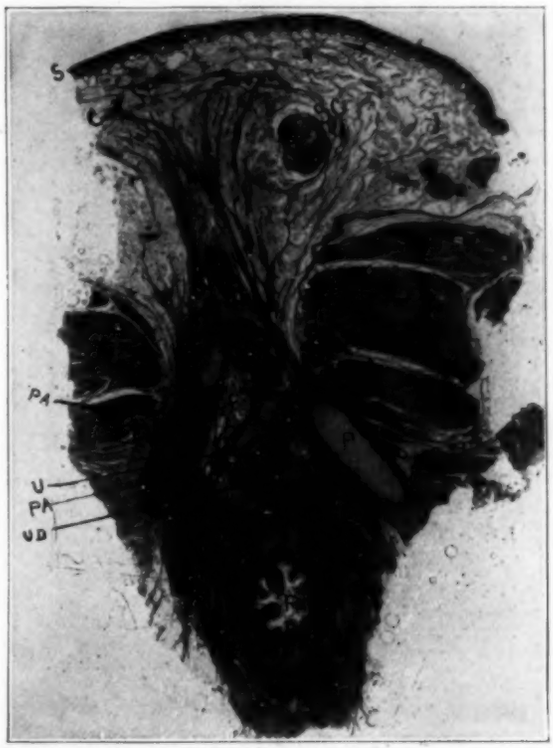

Fig. 5.—Transverse section through urogenital diaphragm of term fetus: *P A*, pudic artery; *U D*, urogenital diaphragm; *R*, rectum; *S*, skin; *U*, urethra; *SC*, spermatic cord; *C*, Colles' fascia; *P*, pubes (embryo, Carnegie Institute 2409, slide 155) × 1.5.

Fig. 6.—Sagittal section through left lobe of prostate of 67 millimeter human embryo showing relation of levator ani muscle to prostate: *B*, bladder; *V*, vas deferens; *S V*, seminal vesicle; *P*, prostate; *P C*, peritoneal cavity; *R*, rectum; *S*, symphysis pubis; *G*, nerve ganglions; *L A*, levator ani muscle (embryo, Carnegie Institute 1656, slide 49); slightly reduced from a photomicrograph × 18.5.

ischiorectal or anal fascia, lying against the under side of the levator ani muscle, while the other, the obturator fascia, covers the obturator internus muscle.[8] Varied

1. Barnes, A. R.: The Pelvic Fascia, Anat. Rec. **20**: 37-56, 1921.
2. Delbet, P.: Vessie urètre, prostate, verge, perinée, in Poirier and Charpy: Traité d'anatomie humaine, Paris **5**: 74-240, 1907.
3. Deaver, J. B.: Surgical Anatomy, Philadelphia, P. Blakiston's Son & Co. **2**: 589-622, 1899-1903.
4. Smith, G. E.: Studies in the Anatomy of the Pelvis with Special Reference to the Fasciae and Visceral Support, J. Anat. & Physiol. **42**: 198-218; 252-270, 1908.
5. Cunningham, D. J.: Text Book of Anatomy, New York, William Wood & Co., 1906, pp. 1277-1278.
6. Stoney, R. A.: The Anatomy of the Visceral Pelvic Fascia, J. Anat. & Physiol. **38**: 438-477, 1904.
7. Campbell, W. F.: A Text Book of Surgical Anatomy, Philadelphia, W. B. Saunders Company, 1921, pp. 471-497.
8. Hadden, David: The Gynecology of Obstetrics, New York, the Macmillan Company, 1915, pp. 11-18.

descriptions of pelvic fasciae and perineal structures are due not so much to incorrectness of descriptions as to misinterpretations of facts, based on alterations in detail found in the postmortem and embalmed specimens. The viscera and blood vessels that supply the perineal structures are invested with the remains of mesen-

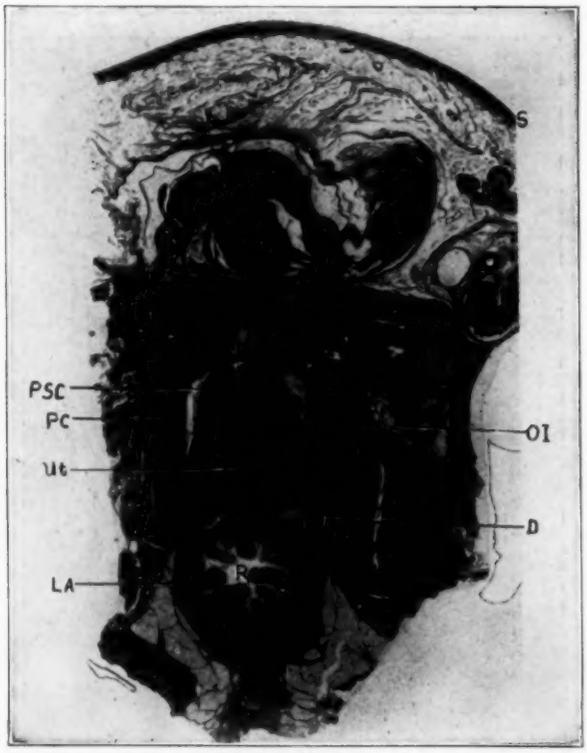

Fig. 7.—Transverse section through prostate of term fetus, showing the course of levator ani muscle: *S*, skin; *P*, pubes; *Ut*, utricle; *L A*, levator ani muscle; *P C*, pubococcygeus muscle; *P S C*, ligament pubosacrococcygeus; *O I*, obturator internus muscle; *R*, rectum; *D*, Denonvilliers' fascia (embryo, Carnegie Institute 2409, slide 98) × 1.5.

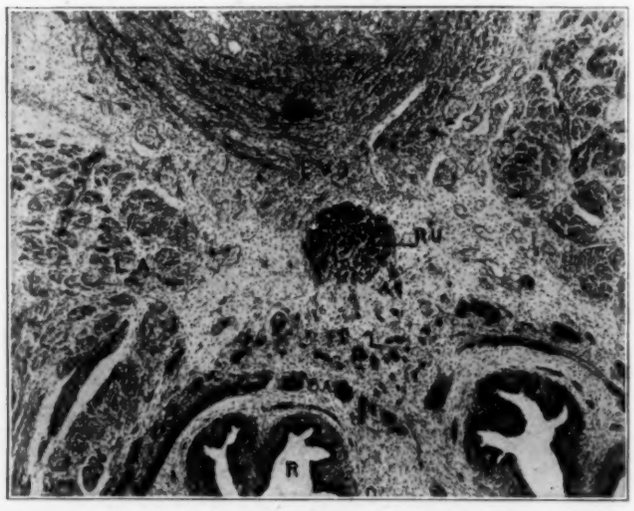

Fig. 8.—Transverse section through pelvis of 130 millimeter embryo, showing recto-urethralis muscle: From the longitudinal layer on the anterior surface of the rectum this bundle of muscle has split off and is shown passing across the rectovesical space; *E V S*, external vesical sphincter; *R U*, recto-urethralis muscle; *L A*, levator ani muscle; *R*, rectum (embryo, Carnegie Institute 1018, slide 168, row 2, section 3); slightly reduced from a photomicrograph × 54.

chymatous tissue in which they originally developed.[9] It is condensed in the perineum to form definite ensheathing layers, and then passes gradually into the general mass of subperineal tissue which fills the whole pelvic cavity and then is no longer traceable. All fasciae are made up of these visceral mesenchymatous extensions and the aponeurotic sheaths of the muscles (parietal pelvic fascia).

The source of confusion relative to the layers of perineal fascia may be avoided by a close application to the following brief scheme, based on experimental and embryologic data (Fig. 3).

PERINEAL FASCIA

A. *Superficial:*
1. Panniculus adiposus of the skin
2. Colles' fascia→dartos muscle→
   → (Anteriorly) Scarpa's fascia→fascia lata
   → (Laterally) superficial fascia of gluteal region
   → (Posteriorly) circumanal fascia

B. *Deep* (Urogenital Diaphragm):
1. Superficial or proximal layer.
2. Deep or distal layer→ (Laterally) obturator fascia. (Posteriorly) endopelvic fascia or Denonvilliers' fascia.

Fig. 9.—Sagittal section of adults pelvis, showing diagrammatically the relation existing between the external vesical sphincter (*E V S*) and the recto-urethralis muscle (*R U*).

In support of this outline and to displace plausible theory by fact, these structures have been investigated from the embryologic point of view.

EMBRYOLOGY

In an 8 weeks embryo (Fig. 4.) there is beginning muscle formation, and the site of the urogenital diaphragm, as indicated by the pudic artery, is merely a mass of undifferentiated mesenchyme cells. In the various stages of development up to the term fetus (Fig. 5) there is still no membrane marking this site, but rather a condensation of loose connective tissue about the membranous urethra. Since the upper limits are not very clearly marked, the division between the prostatic and the membranous urethra may be best

9. Derry, D. E.: On the Real Nature of the So-Called "Pelvic Fascia," J. Anat. & Physiol. **42**: 97-106, 1907; Pelvic Muscles and Fascia, ibid., pp. 107-111.

defined as the point at which the lowermost prostatic tubules leave off.[10] In the model there is a very large transverse perineal muscle,[11] but there is no proximal layer of the urogenital diaphragm to divide it into deep and superficial layers. Cowper's glands are rather large, and extend well down between the rectum and the levator ani muscle. They are fairly symmetrical, and have short ducts. The levator ani muscle (Fig. 6) supports the prostate laterally; but, contrary to the generally accepted descriptions, it does not lie between the prostate and the rectum (Fig. 7). The recto-urethralis muscle[12] appears as a band arising from the anterior longitudinal layer of the rectum at about the level of the verumontanum (Fig. 8) and, passing forward and downward, fuses below the membranous

Fig. 10.—Transverse section through pelvis of term fetus, showing origin of suspensory ligament: *P*, pubes; *R*, rectum; *U*, urethra; *E A S*, external anal sphincter; *S L*, suspensory ligament (embryo, Carnegie Institute 2409, slide 147) × 1.5.

urethra with the raphé of the external vesical sphincter (Fig. 9). The suspensory ligament (Fig. 10) arises from the linea alba and the periosteum of the pubis. It passes forward as if to bisect the perineum and fuse with the "septum scroti."[13] A dense layer encloses the penis, looser layers pass around the spermatic cords, and still less dense layers radiate outward, forming partitions.

Colles' fascia (Fig. 12) does not show as a definite sheath, but as numerous partitions or condensations of connective tissue that pass through the loose cellular tissue of the perineum, scrotum and penis. The inner fibers of the suspensory ligament, reinforced by an aponeurosis from the ischiocavernosus muscles (Fig. 13), form a penile sheath such as described by Buck, while the loose outer fibers join with the dartos to

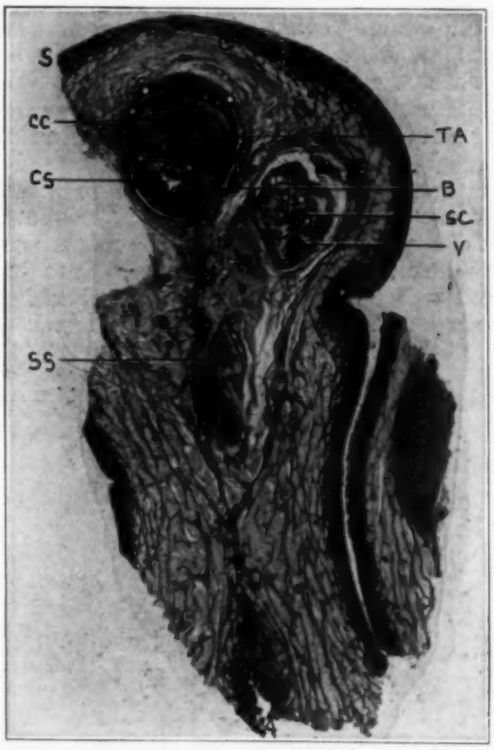

Fig. 11.—Section through perineum of term fetus, showing "septum scroti" and Buck's fascia: *S*, skin; *C C*, corpora cavernosa; *C S*, corpus spongiosum; *T A*, tunica albuginea; *B*, Buck's fascia; *S S*, septum scroti; *S C*, spermatic cord; *V*, vas deferens; *A*, anus; *C*, Colles' fascia (embryo, Carnegie Institute 2409, slide 218) × 1.5.

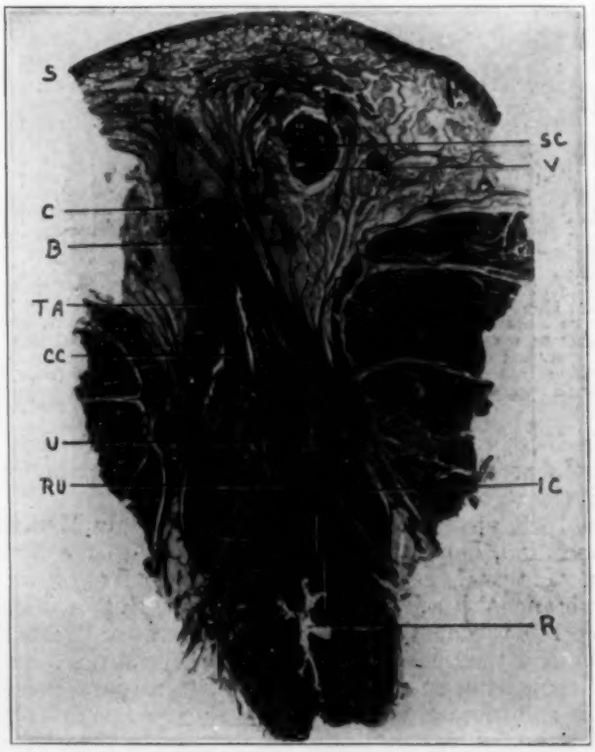

Fig. 12.—Section through pelvis of term fetus, showing Colles' fascia and Buck's fascia: *S*, skin; *C C*, corpora cavernosa; *T A*, tunica albuginea; *B*, Buck's fascia; *S C*, spermatic cord; *V*, vas deferens; *R*, rectum; *U*, urethra; *C*, Colles' fascia; *I C*, ischiocavernosus muscle; *R U*, recto-urethralis muscle (embryo, Carnegie Institute 2409, slide 166) × 1.5.

form Colles' fascia. The end-results are comparable to the occurrence of the dense anterior layer of Denon-

10. Johnson, F. P.: The Later Development of the Urethra in the Male, J. Urol. **4**: 447-502 (Dec.) 1920.
11. Holden, Luther: A Manual of Dissection of the Human Body, Philadelphia, P. Blakiston's Son & Co., 1885, pp. 525-581.
12. Wesson, M. B.: The Development and Surgical Importance of the Recto-Urethralis Muscle and Denonvillier's Fascia, J. Urol. **8**: 339-359 (Oct.) 1922.
13. Felix, W.: The Development of the Urogenital Organs, in Keibel and Mall: Manual of Human Embryology, Philadelphia **2**: 752-979, 1912.

villiers'[14] fascia on the prostatic side of the rectovesical space, with a loose tissue as a posterior layer on the other side.

Abraham Colles[15] of the Royal College of Surgeons in Ireland, in 1811, described the fascia bearing his name. Like many of the famous beacon lights of surgery, he was interested in urology and noticed that following a rupture or ulceration of the "posterior part of the canal of the urethra," the effusion of urine formed a tumor in the perineum, but did not suppurate there because of the unyielding nature of the fascia, and that diffusion laterally toward the thighs was prevented by the close attachment of this fascia to the rami of the pubes and ischium. Hence, it passed into the loose tissue of the scrotum and there suppurated or passed up over the pubes.

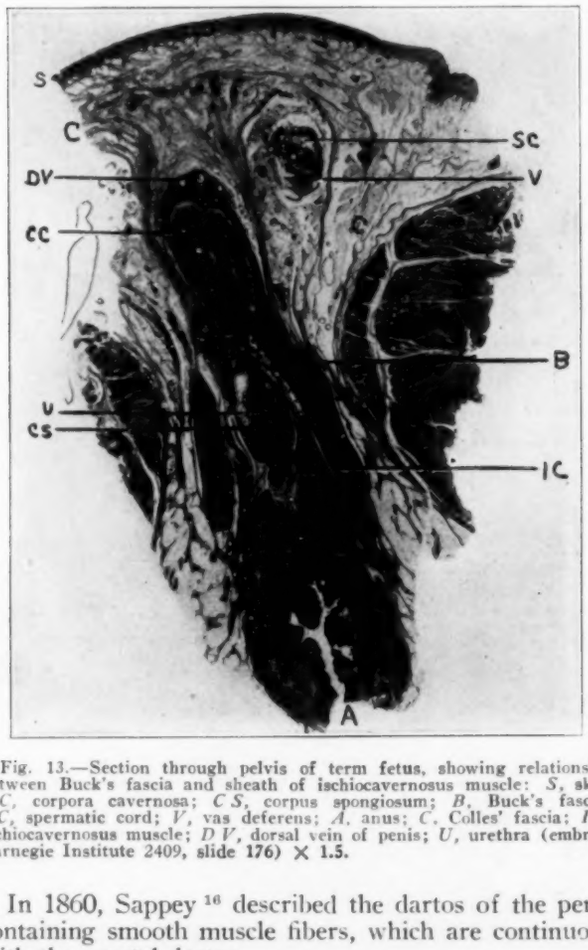

Fig. 13.—Section through pelvis of term fetus, showing relationship between Buck's fascia and sheath of ischiocavernosus muscle: *S*, skin, *C C*, corpora cavernosa; *C S*, corpus spongiosum; *B*, Buck's fascia; *S C*, spermatic cord; *V*, vas deferens; *A*, anus; *C*, Colles' fascia; *I C*, ischiocavernosus muscle; *D V*, dorsal vein of penis; *U*, urethra (embryo, Carnegie Institute 2409, slide 176) × 1.5.

In 1860, Sappey[16] described the dartos of the penis containing smooth muscle fibers, which are continuous with the scrotal dartos.

In 1848, at the first session of the American Medical Association, Gurdon Buck, Jr.,[17] surgeon to the New York Hospital, reported the discovery of a distinct membranous sheath investing the penis. Buck's fascia (Fig. 14) is a continuation of the suspensory ligament above and the perineal fascia below; it is divided into two compartments, one containing the corpora cavernosa, and the other the corpus spongiosum. "The cavity formed by the sheath and occupied by the corpus cavernosum is limited posteriorly by the triangular ligament. It also sends off, from its upper surface, membranous septa between the accelerator muscles in the middle, and the erectors on either side, to join the triangular ligament, and thus forms three distinct and

Fig. 14.—Buck's fascia. A dissection of the sheath of the penis, showing: *A*, the corpus cavernosum, enucleated from the sheath; *B*, the sheath, split up through the suspensory ligament, of which it is a continuation; *C*, the relations of the sheath to the corpus spongiosum urethrae, one layer of which passes above, the other below it; *D*, its relation to the glans penis, to which the sheath adheres inseparably by its outer surface, while by its inner surface it caps the corpus cavernosum; *E*, the dorsal arteries, veins and nerves, raised with the sheath (Buck).

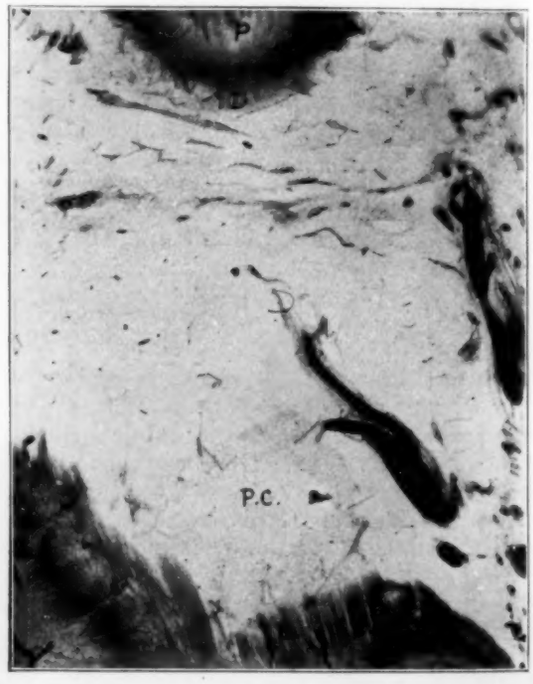

Fig. 15.—Transverse section through the pelvis of 208 millimeter human embryo, showing the most dependent part of the peritoneal cavity; there is no evidence of raphé formation of the layers of peritoneum, which ends close against the rectum; anteriorly there is a condensation of mesenchyme tissue with a resulting fascia (Denonvillier's fascia) in contact with the prostate: *PC*, peritoneal cavity; *D*, Denonvillier's fascia; *P*, prostate; *L*, levator ani (embryo, Carnegie Institute 2402, slide 250, section 1); slightly reduced from a photomicrograph × 18.5.

14. Denonvilliers, C.: Anatomie du périnée, Bull et mém. Soc. Anat. De Paris **2**: 105-106, 1836.
15. Colles, Abraham: A Treatise on Surgical Anatomy, Dublin, Gilbert and Hodges, 1811, pp. 151-180.
16. Sappey, P. C.: Traité d'anatomie, Paris, 1877, Adrien Delhaye **3**: 654, 1877.
17. Buck, Gurdon, Jr.: A New Feature in the Anatomical Structure of the Genito-Urinary Organs Not Hitherto Described, Tr. American Medical Association **1**: 367-372, 1848.

deep sheaths that are confounded anteriorly with the common sheath investing the corpus cavernosum."

Denonvilliers' fascia is the term applied by urologists to the sheath between the prostate and the rectum. As in the development of the other pelvic and perineal fascia, the anlage space is in the beginning filled with a syncytial mass of embryonic connective tissue cells; eventually differentiation occurs, and there is a condensation of connective tissue, anteriorly and posteriorly, with a potential space between. The anterior layer, covering the prostate, is the thicker, and elastic tissue fibrils predominate, which causes the characteristic shiny appearance of Denonvilliers' fascia (Fig. 15). A sheath of this fascia surrounds the ejaculatory ducts and utricle as they pass through the prostate. At the apex of the prostate, the fascia is continuous with the superior layer of the urogenital triangle.

There is no evidence that Denonvilliers' fascia is formed by the fusion of two layers of fetal peritoneum as described by Cuneo and Veau,[18] but rather it is apparently differentiated from a condensation of mesenchymal tissue occurring subsequent to the formation of the urethra and other definite structures. Furthermore, it is a generally accepted embryologic law that when two layers of peritoneum are permanently approximated, the constituents revert to type, and the mesothelium is absorbed and disappears, leaving only a bed of undifferentiated mesenchyme.

The fasciae of the perineum are of interest to the surgeon because of their influence in controlling the course of urinary extravasations. Buck's study was made seventy-five years ago, in an attempt to explain a "circumscribed, hard, prominent swelling of the size of a Madeira nut, in the anterior part of the scrotum, covering and closely embracing the urethra, and also extended on either side around the root of the penis, in the form of an indurated flattened band."

In order to confirm Buck's description of fascia in figure of eight, enclosing the two cavernosa bodies in one loop and the spongiosum in the other, an intraurethral injection was made through the dorsum of the urethral canal between the corpora cavernosa. At first a small lump formed; then, by using considerable force, the penis became very rigid. The pressure was increased and held at the maximum for a considerable time. An incision was then made down the dorsum of the penis, as described by Buck, and it was found that the pressure of the fluid had dissected the corpora cavernosa away from the corpus spongiosum, and from the fascia of the penis.

To determine the extent of Colles' fascia anterior to the suspensory ligament, under inspection through an endoscope, the urethra in fresh cadavers was punctured by means of a long needle, and colored fluids were injected so as to simulate a rupture of the urethra. Ventral ruptures of the bulb formed a circumscribed lump in the perineum, but with increased injections the fluid gradually spread, evidently passing between connective tissue partitions. When the force was still further increased, these partitions gave way, and one side of the scrotum became filled. Extending the amount of fluid still further caused the extravasations to rise toward the symphysis; but when its passage in that direction was prevented by means of pressure over the pubic bone, the fluid passed down into the penis between Colles' and Buck's fascia, demonstrating the continuity of Colles' fascia into the penile organ.

18. Cuneo, B., and Veau, V.: De la signification morphologique des aponeuroses périvésicales, J. Anat. **35**: 235-245, 1899.

Three types of urinary extravasation are commonly encountered: between the layers of Buck's fascia; within the superficial perineal interspace, and distal to the deep layer of the urogenital diaphragm. If the rupture occurs anterior to the urogenital diaphragm and the opening is through the dorsum of the corpus spongiosum, the fluid is confined between the layers of Buck's fascia surrounding the corpus cavernosum. However, the common pathway is ventral and the urine is confined temporarily by Colles' fascia, and because of the dense fascial partitions within the superficial perineal interspace the fluid tends to pass from the perineum down in the scrotum and then up over the pubes. In early stages, the extravasation is unilateral; later, both sides of the scrotum as well as the penis down to the glans are involved, and the fluid may pass up as far as the axilla. If the rupture occurs distal to the urogenital diaphragm, the extravasation is held forward by Denonvilliers' fascia and by dissecting up the peritoneum from the bladder passes into the space of Retzius, or it may extend posteriorly up to the diaphragm and eventually even pass through the inguinal rings and appear on the abdomen.

As evidence that Buck's fascia, Denonvilliers' fascia, and urogenital diaphragm are not the impenetrable bulwarks they are supposed to be I shall cite the following cases in respective order. Colles [15] reported a chancre of the corona that caused infiltration under the penile sheath and opened on the abdomen. Smith [4] found at necropsy a case of tuberculosis of the seminal vesicles that broke through Denonvilliers' fascia, forming a rectal fistula and leaving the bladder wall uninfected. In the clinic of Hugh H. Young, I observed an 84 year old patient with cancer of the prostate who developed a priapism because of the extension of the malignant growth into the corpora cavernosa.

If careful descriptions of the findings of a large number of ruptured urethra operations appeared in the literature, definite conclusions as to the paths followed by extravasated urine could be drawn, and theories could be replaced by facts.

SUMMARY

1. Buck's fascia has a definite given position as described by him, and which is borne out by embryologic studies and by extravasation experiments.

2. Colles' fascia has certain definite extensions anterior to the suspensory ligament, which fact also is demonstrable by embryologic and experimental study.

3. Colles' fascia in the penis bears the same relationship to Buck's fascia that the posterior layer of Denonvilliers' fascia does to the anterior layer.

4. The urogenital diaphragm occurs subsequent to the appearance of the urethra, muscles, blood vessels and pelvic viscera.

5. The pelvic and perineal fascia are made up of mesenchymal extension from the blood vessels and viscera and from the aponeurotic sheaths of the muscles, and are formed from a condensation of primarily loose undifferentiated tissue.

6. Denonvilliers' fascia is formed by a condensation of mesenchyme tissue, and not by a fusion of layers of fetal peritoneum.

7. The urogenital fascia has not the same density early in life that it later acquires, with the assumption of the upright position and the consequent strain put on it.

549 Flood Building.

ABSTRACT OF DISCUSSION

DR. E. M. WATSON, Buffalo: The formation of the structures in the perineum is extremely important, and Dr. Wesson's work will be of great value, particularly to those who are engaged in teaching. The different entities he has described have always been a little hazy, and as a means of showing the paths of extravasation and separation this paper will help us all immensely.

DR. B. A. THOMAS, Philadelphia: I agree with Dr. Watson. The fundamental work of Dr. Wesson is very illuminating. I have profited much by listening to him, but cannot add anything.

DR. HOMER G. HAMER, Indianapolis: It is certainly quite a help to have these anatomic factors brought out so clearly.

DR. M. B. WESSON, San Francisco: I wish to emphasize the plea I made in the paper that cases of rupture of the urethra be reported with detailed anatomic descriptions of the planes of extravasation. Not until the literature contains a sufficient number of such accurate portrayals can the vague theories of urinary extravasation be replaced by facts. The medical journals contain many complete case reports on subjects of questionable importance, but absolutely nothing of value has been published along this line.

HEREDITARY HEMOPTYSIS*

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AND
REUBEN OTTENBERG, M.D.
NEW YORK

In 1918 we[1] described a family that presented what appeared to be a new form of hereditary hemorrhagic disease distinct from the two already established forms of bleeding tendency, hemophilia and multiple telangiectases. In this family, seven persons presented almost identical histories of repeated profuse hemoptyses beginning about puberty or in early adult life and occurring at intervals throughout life.

We have now kept three bleeders in this family under observation for an additional five years since our first report, (through the courtesy of Dr. S. S. Lubin, their family physician). This makes a total of seven years during which the clinical picture of the condition has been observed and has not changed. We think that this long period of observation is sufficient to exclude tuberculosis.

The first member of the family to be seen by us was admitted to the Mount Sinai hospital in 1916, while suffering from profuse hemoptysis. It developed that he had suffered from similar attacks at intervals for many years. Naturally, he had been repeatedly suspected of being a victim of pulmonary tuberculosis; but proof of such a diagnosis had never been obtained. He had never suffered from any other symptoms except the hemoptysis. Furthermore, on investigation, it was found that six other members of the family (two of whom were subsequently examined by us) gave practically identical histories. There were no cases of tuberculosis in the entire family. Not one of the family was a bleeder in any other sense; that is, none of them bled inordinately from accidental wounds or otherwise than from the lungs.

Careful examination of the blood of the patient admitted to the hospital showed that it lacked the characteristics of hemophilia; the coagulation time was normal. The characteristics of chronic purpura were also absent; the platelet count was within the normal range, and the bleeding time was normal.

The heredity of the disease in this family is not sex-limited. The disease occurs in and is transmitted by females as well as by males. The hemorrhages occur only at or after the age of puberty, the earliest hemorrhage recorded in any individual being at the age of 12 years. None of the hemorrhages have been fatal.

Considering the possibility that the condition might be one of telangiectasis similar to those of multiple hereditary telangiectasis (Osler) but situated in the bronchial tree, we secured the services of Dr. Yankauer, who performed bronchoscopy on two members of the family, with entirely negative results. If the condition is due to telangiectases, they must be localized in the finer bronchi or in the pulmonary tissue.

On the basis of physical examinations of three lung bleeders belonging to the family, as well as of roentgenologic examination of two, and tuberculin tests of one, and on the basis of the clinical fact that none of the seven individuals who suffered from hemorrhages ever developed any of the symptoms of tuberculosis, we believe that tuberculosis can be excluded as the cause of the hemorrhage.

We know of no condition described in the literature similar to the one here reported. The only comparable disease with which we are acquainted is the "idiopathic family hematuria" described by Apert,[2] which has been observed in two families.

REPORT OF CASES

CASE 1.—R. W., a man, aged 39, Jewish Russian, jeweler, first examined, Oct. 12, 1916, had been subject to attacks of hemoptysis since the age of 21. The patient's maternal grandmother (1)[3] had attacks of hemoptysis exactly like those of the patient. She lived to be 70 years of age. The patient's mother (2) died at the age of 66, of a sudden heart attack; she had suffered from attacks of hemoptysis every few months for at least ten years, to the patient's knowledge. The patient's mother had one brother and one sister. The mother's brother (3) was 60 years of age and had been subject to attacks of hemoptysis similar to those of the other members of the family for at least twenty-five years, although he had not had any hemorrhages for the last five years. One of his sons began expectorating blood in 1916, when we first became acquainted with the family and is described as Case 3.

The patient had three brothers and two sisters, of whom one brother and one sister were subject to attacks exactly like his own. His brother (4) was 55; his hemoptyses began during adult life, and letters from Russia received in 1922 indicated that he still had occasional hemoptyses, while his five children, ranging from 15 to 25 years of age, were not mentioned as having any hemoptyses. The patient's sister was 30 years old, and had had frequent attacks of hemoptysis since the age of 12. A more detailed account of her is given in the report of Case 2. The patient himself had three children, aged 11, 15 and 18 years, who had so far not suffered from hemoptysis. There had been no case of tuberculosis in the family.

During the first three years of the trouble, the patient had six attacks; then they became somewhat more frequent. In the five years before his admission to the hospital in 1916, he bled only five or six times. He had been repeatedly examined by various physicians, and pronounced not tuberculous. The attacks almost always started when he arose in the morning; he said that he was a mouth breather, and that his throat was very dry when he waked up. On this

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* From the Medical Department, Mount Sinai Hospital.

1. Contributions to Medical and Biological Research dedicated to Sir William Osler, New York 1: 632, 1919.

2. Apert: Traité des maladies familiales et des maladies congénitales. Hurst, A. F.: Guy's Hosp. Rep. 73: 368 (July) 1923.

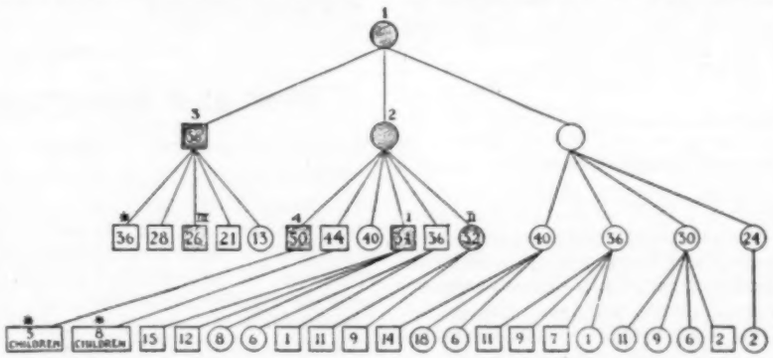
3. The roman and arabic numerals used refer to the numbers on the accompanying chart.

account he usually had to cough very hard every morning. The bleeding came on only after about ten minutes of hard coughing, and he attributed it to the coughing. At the start it was usually slight, but gradually increased. At first the blood was bright red, but by the second or third day it was generally dark. He knew by experience that when black blood appeared there was no more danger of bleeding, and returned to his work. He did not usually call a physician, as he had learned that the bleeding always stopped spontaneously. According to his estimate, he lost about a half pint of blood in an average attack, but sometimes as much as a pint and a half. Except for an attack of malaria, he never had had chills or night sweats.

We watched him from day to day during the severe attack in 1916, which was one of the most prolonged that he had ever had, lasting about fifteen days altogether.

Since then he had continued having more or less profuse hemorrhages at irregular intervals. The last year was one of the worst he had ever gone through, and he had had more than thirty hemorrhages. As a result, he was rather weak, but was still able to go on with his work.

We made repeated physical examinations, all of which were essentially negative so far as any explanation of his hemorrhages was concerned. Repeated careful examinations of the nose and throat and a bronchoscopy by Dr. Yankauer also revealed nothing beyond a chronic catarrhal laryngitis. The blood examination in 1916 showed: hemoglobin, 73 per cent.; erythrocytes, 4,200,000; leukocytes, 12,000. Differential count: polymorphonuclear neutrophils, 77 per cent.; lymphocytes, 22 per cent.; eosinophils, 1 per cent.; platelets, 300,000. The bleeding time was four minutes. The coagulation time (test tube method) was five minutes. The Wassermann reaction was negative. The urine was normal.



Genealogy: Lung bleeders indicated by shading; circles, females; squares, males; *, in Europe, no details obtainable; numbers in squares, ages in 1918; numbers above squares or circles, numerals used in text; roman numerals (I, II, III), subjects examined by us; arabic figures (1, 2, 3, 4), bleeders who were not available for examination. Several minor errors that appeared in our publication of 1918 have been corrected.

During 1916 the patient was kept in bed eleven days and a subcutaneous tuberculin test carried out, with negative result.

Roentgen-ray examinations in 1916 and 1922 showed that the lungs were normal.

CASE 2.—E. R., a woman, aged 37, sister of first patient, married, housewife, seen in 1916, had two children, aged 16 and 14, both healthy. Except for hemoptyses, she had never been seriously ill. She stated that for most of her life she had a tendency to "catch cold" and develop a hoarse voice. She coughed up blood for the first time at the age of 12, and did not have another attack until 16. The second hemorrhage occurred shortly after the onset of menstruation at 15. Since then the attacks had come on at irregular intervals, sometimes skipping several years. When they occurred, she usually bled for hours at a time. The attacks seldom lasted more than one day. She always felt a tickling sensation a day or two before an hemoptysis, so that she could almost always foretell it. The blood that was brought up was bright red.

After her first childbirth, in 1907, she was for a time in poor condition; otherwise she had always been stout and vigorous. She had been repeatedly examined by physicians, all of whom suspected tuberculosis. The sputum had been examined repeatedly, with negative results. On the whole, her hemorrhages were mild as compared with those of her brothers R. W. and L. W.

Since we first studied her, she has continued to have several hemorrhages a year. June 6, 1923, she had another hemoptysis lasting three days, the most profuse one she has ever had. She lost certainly more than a pint of blood, and the blood was bright red until it stopped. Physical examinations in 1916, 1918 and 1923 have been identical, and beyond a mild laryngitis have shown nothing abnormal. Likewise roentgen-ray examinations of the chest and blood examinations have been negative. Bronchoscopy by Dr. Yankauer failed to show the source of bleeding.

CASE 3.—R. W., a man, aged 40, married, cousin of the first patient, had typhoid fever many years ago, and was suspected of having heart trouble at the time. He had coughed a great deal for the last twelve years, but his general health had been good.

While at work in 1916, he suddenly expectorated blood. The bleeding lasted four days, but was not profuse; he estimated that it amounted to half a glass of blood in the whole time.

In 1919, shortly after his marriage, he had another hemorrhage similar to the first. His general health is good (1923). Complete physical examinations, made in 1916 and 1918, showed only unimportant abnormalities.

SUMMARY

Seven members of a family present identical histories of rather profuse hemoptyses occurring at intervals for years, beginning at puberty or in early adult life and not impairing the general health seriously. We have examined three of these bleeders at intervals over a period of seven years, and feel certain that tuberculosis can be excluded as the cause of the hemorrhages. No abnormalities of the blood and no telangiectases of the upper air passages have been found. The cause of the hemorrhages is entirely unknown.

The disease is apparently hereditary. In the small number of cases here recorded, the condition seems not to skip generations. If this continues to occur in the future generations, it will presumably turn out to be a mendelian dominant; but at present the material is too limited to afford certainty on this point.

15 West Eighty-Ninth Street.

Presence of Striated and Nonstriated Muscle in Auricle Cause of Fibrillation.—The assumption that the auricle contains two kinds of muscle, the one more primitive and the other more highly organized, gives a simple explanation of many clinical facts otherwise difficult to understand. For instance, paroxysmal tachycardia becomes quite easily understood. It should be looked upon as an intermediate stage between the normal rhythm and fibrillation, the auricle responding to a stimulation which normally does not reach it. It also explains why digitalis does not act in cases showing this rhythm, as stimulation of the vagus tends, if anything, to increase the frequency of the fibrillary movement and not to slow it. It has always been difficult to understand why digitalis does not act upon the normal heart even in large doses. If one supposes that the striated muscle, with its nerve the sympathetic, is in some way weakened or poisoned in rheumatism, it is easy to understand how murmurs make their appearance and how digitalis acts. The activity of the smooth muscle is normally completely inhibited, but in rheumatism it is unmasked as it were, and exposed to the influence of drugs like digitalis.—J. M. Gill: *Guy's Hosp. Rep.* **73**:428 (Oct.) 1923.

Clinical Notes, Suggestions, and New Instruments

A USE FOR THE DISCARDED HYPODERMIC NEEDLE

CONSTANTINE L. A. ODÉN, M.S., M.D., MUSKEGON, MICH.

I have found that a hypodermic needle of small caliber is the best instrument with which to obtain blood from the ear or the finger, especially from children; it makes a clean, nearly painless cut and allows ample flow without the wound's closing, as so often happens when many other types of lancet are used.

Needle extending through cork into cotton saturated with alcohol.

It can be inserted through a cork and kept in a bottle stuffed with cotton and saturated with alcohol, so that it is always sterile when wanted. The patient sees only the cork, which causes no fear. This is advantageous especially with children. The illustration shows how the needle can be inserted through the cork for sufficient distance to allow penetration of the skin. This can easily be adjusted to suit the occasion.

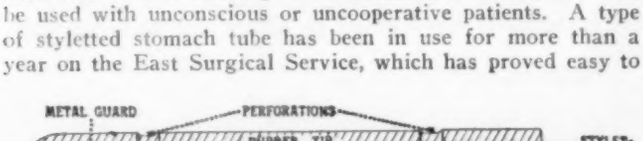
113 West Western Avenue.

A STYLETTED STOMACH-TUBE *

TRACY JACKSON PUTNAM, M.D., BOSTON

The use of a styletted duodenal tube has been suggested by Jutte[1] and by Bondi and Eisler.[2] According to Eisler's technic, a brass wire is introduced into an ordinary duodenal tube, previously oiled. Stiffened by the wire, the olive of the tube is pushed past the cardia, and guided to the antrum by palpation under the fluoroscope. This often saves many minutes in patients who find it difficult to swallow the ordinary tube, but in our experience, the time-consuming part of a duodenal intubation is persuading the olive to pass the pylorus where the wire is of little assistance.

Gastric intubation is still a much more common and useful procedure than duodenal intubation. The ordinary duodenal tube is often employed instead of the large Nélaton stomach-tube because it is less unpleasant to take; it cannot, however, be used with unconscious or uncooperative patients. A type of styletted stomach tube has been in use for more than a year on the East Surgical Service, which has proved easy to



Tip of styletted stomach-tube, about one and one-half times the actual size: The rubber tube is the size of ordinary duodenal tubing; the wire stylet is seen resting inside the metal cone.

pass and less disturbing to most patients than either of the standard models. It has been used for gastric analyses, stomach washes and gavages, and has been of particular value for very ill patients after operation with distention of the stomach or persistent vomiting. It consists of a piece of duodenal tubing 4 mm. in diameter and 70 cm. long. A cone-shaped metal tip, closed at the bottom, about 7 mm. in length and small enough to fit snugly inside the rubber tube, is tied and cemented within its lower end. A bullet-shaped rubber tip, about 7 mm. in diameter and 5 cm. in length, is cemented or vulcanized outside the rubber tubing, and is pierced by four perforations the size of its bore. It is thus much smaller and softer than the usual form of tip, but will admit any particles small enough to traverse the tube. The upper end of the tube has a bell-shaped expansion to fit a syringe, or is cemented to a short piece of larger tubing. The whole tube is filled with liquid petrolatum and a stiff brass wire, gage 22, about 0.8 mm. in diameter, is fitted into it, the end of the wire resting inside the little metal cup. The tube is kept slightly on a stretch over the stylet by a spring clip, fashioned out of the same wire at its upper end. If the tube is then pushed past the cardia still under tension, the wire cannot slip out of the metal cup; if the rubber tip is of the correct proportions, the wire cannot be made to protrude through any of the perforations, even if it is loose within the tube. When the stomach is reached, the clip is undone, and the wire at once withdrawn. This may be difficult unless the tube is thoroughly oiled and the wire is clean and straight; it should never be put away inside the tube. Fluids may be introduced or withdrawn with a syringe, or larger amounts allowed to flow in by gravity from a reservoir, or aspirated into a suction bottle without any particular discomfort to the patient.

The tube may be made at home without great difficulty, or may be obtained from the F. H. Thomas Company, Boston. Ordinary Dakin's tubing is a good size for the tip, and a rounded end may be made out of rubber tire putty.

108 Marlboro Street.

* From the East Surgical Service, Massachusetts General Hospital.

1. Jutte, cited by Weilbauer: Deutsch. med. Wchnschr., Oct. 6, 1922.
2. Bondi, S., and Eisler, F.: München. med. Wchnschr. **69**: 1573 (Nov. 10) 1922.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

IODOSTARINE-ROCHE.—Diiodotariric acid.—$C_{18}H_{32}I_2O_3$. —An iodine addition product of tariric acid, $C_{18}H_{32}O_2$, derived from the fruit of a species of *Picramnia*. Iodostarine contains 47.5 per cent. of iodine.

Actions and Uses.—Iodostarine acts in the system similarly to the inorganic iodides. It is not broken up in the stomach, but a portion of the iodine is split off when it enters the intestine. The undecomposed portion is readily absorbed and, as in the case of other fats, is largely deposited in the tissues where it is slowly split up. The action of iodostarine is exerted more slowly than that of the inorganic iodides (see Iodine Compounds, Iodized Fats and Fatty Acids, New and Nonofficial Remedies, 1923, p. 151).

Dosage.—The same as that of potassium iodide. Supplied in the form of tablets only.

Manufactured by F. Hoffmann-LaRoche & Co., Basle, Switzerland (Hoffmann-LaRoche Chemical Works, New York). U. S. patent 982,656 (Jan. 24, 1911; expires 1928). U. S. trademark 87,996.

Tablets Iodostarine-Roche 0.25 Gm.

Chocolate Tablets Iodostarine-Roche: Each contains iodostarine equivalent to iodine 0.01 Gm.

Iodostarine is a white, crystalline solid, odorless and tasteless. It is insoluble in water; slightly soluble in cold alcohol; soluble in warm alcohol, ether, chloroform, benzene and carbon disulphide. It is permanent in the air. It melts at 48 to 49 C.: at a higher temperature it decomposes with evolution of iodine.

To about 1 Gm. of iodostarine, accurately weighed, add 50 Cc. of half-normal potassium hydroxide in methyl alcohol. Heat for two hours under a reflux condenser. Remove the condenser, boil off the alcohol, taking care to avoid loss by bumping, and transfer the residue to a separator, using at first warm water, but finally a little diluted nitric acid to insure complete transfer of the iodide to the separator. Cool, add 50 Cc. of ether and sufficient diluted nitric acid to decompose the soap. If the solution becomes yellow from liberation of iodine add a little sodium sulphite to reduce the iodine. Shake thoroughly and draw off the acid layer through a wetted filter into a 500 cubic centimeter flask. Wash the ether in the separator with three separate portions of water of 25 Cc. each, adding these through the filter to the acid solution in the flask, warm to expel dissolved ether, cool, and add 5 Cc. of concentrated nitric acid and, at once, 25 Cc. of tenth-normal silver nitrate. Titrate the excess of silver with tenth-normal potassium sulphocyanate, using ferric ammonium sulphate as indicator. The volume of tenth-normal silver nitrate used indicates not less than 47.5 per cent. of iodine.

Special Article

REPORT OF COMMITTEE ON LYE LEGISLATION TO THE SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Last year your committee submitted a report of a survey of the situation as to legislation providing for the labeling conspicuously with the word "poison" all retail packages of caustic alkalis on which survey a campaign for such legislation was to be based.

We beg now to report that such a campaign was planned and carried out in Pennsylvania in support of House Bill No. 395, a copy of which is hereto attached. This bill was introduced by Dr. Benjamin Patterson, was passed by both branches of the legislature, was signed by Governor Pinchot, and has therefore become a law.

Your committee acknowledges with gratitude the utmost courtesy and open-mindedness with which its communications were received and considered by Governor Pinchot and by the members of the legislature. The work of Hon. Benjamin Patterson is deserving of the highest commendation. Thanks for wise counsel and earnest support are due to Dr. George H. Simmons, Hon. William Potter, Dr. Fred L. Van Sickle, Dr. W. B. Chamberlain, Dr. G. A. Knowles, Dr. David A. Riesman, Dr. Martha Tracy, Dr. William C. Woodward, Dr. W. W. Keen, Dr. Ellen J. Patterson, Dr. A. M. Carr, Dr. Ross V. Patterson, Dr. George H. Meeker, Dr. William Pepper, Dr. W. O. Pearson, Dr. R. R. Huggins, Dr. Gabriel Tucker, Dr. Louis H. Clerf and to the members of the legislative committee of every County Medical Society in the state of Pennsylvania. The support of the medical profession was unanimous. The support and cooperation of the American Child Health Association is gratefully acknowledged.

Your committee acknowledges with thanks the development, by Dr. L. W. Dean, of a very important point in the economics of the lye matter, namely, the annual cost to the state of the hospitalization of children poisoned with lye.

Your committee is deeply indebted to Dr. William C. Woodward, Executive Secretary, Bureau of Legal Medicine, American Medical Association, for writing to lye manufacturers to ascertain what they might be willing to do in the matter of labeling their preparations. Dr. Woodward reports as follows:

> I have found the manufacturers of caustic acid and alkali preparations unresponsive, except one, who pretends to believe that there is no more need for legislation safeguarding the distribution of concentrated lye for household use than for legislation safeguarding the distribution of window glass or of a certain brand of condensed soups. One might cut one's hand in opening a can containing such soup, says my correspondent—and, therefore, a danger label is as much needed on a can of soup as on a can of lye.

The only comment necessary is to say that the same logic might be applied to mercuric chlorid antiseptic tablets. A person might cut himself by breaking the bottle; hence there is no more necessity of labeling it "Poison" than of so labeling a can of soup! As Dr. Woodward was very careful to point out, this individual's opinion is not to be taken as a criterion of the opinion of all packers, some of whom have voluntarily and properly labeled their packages. It proves conclusively, however, that there are and always will be individuals that cannot be convinced and that cannot be controlled except by legislative enactment.

Since the passage of the Pennsylvania law, your committee has been informed that one group of lye packers has received a report from one of its committees recommending certain improvements in the labeling of lye by the packers in that group. Such action is, of course, highly to be commended, and efforts to get commercial interests to label their products properly should be continued. But, in the opinion of your committee, such action does not lessen the necessity for legislation for the following reasons:

1. Associations of packers have no power to compel specified action by the affiliated concerns. The recommendations of the group referred to contain statements such as these:

"A specified size of type is impractical."

"to print in red ink, *if practical.*"

"as plainly and conspicuously *as circumstances permit* in each instance."

All of which means that each packer in the group can do as he pleases "in each instance."

2. No commercial interest or association of interests can prevent the starting of new independent interests or control independent interests, new or old. Trade in lye can never be monopolized. Anybody can, at any time, on small capital, start packing a new brand of lye and label it as he pleases.

3. There are and always will be individual packers, like the packer quoted by Dr. Woodward, who are unconvinced of the necessity of labeling packages of lye with the word poison. Nothing but legislation will reach the unconvinced or unfair competitor.

4. There is no reason why the labeling of corrosive poisons sold by *lye packers* should be left to the option of the seller, when the *druggist* is compelled by law to attach a poison label to corrosive poison *he* sells. Such an argument would imply that the druggist is less trustworthy than the lye packer.

5. In all matters of public health, legal enactment comes first. With this solid backing, commercial cooperation and public education are developed rapidly. This, in the opinion of your committee, is the proper course to pursue in the lye matter.

6. Dr. H. M. Taylor of Jacksonville, Fla., reports that, as a result of his presenting the clinical and other facts in evidence of the necessity for protective legislation, the legislature of Florida promptly, by an almost unanimous vote, passed a bill modeled after the Pennsylvania statute, providing for proper labeling of lye. The prompt action by the legislators and governors of Pennsylvania and Florida show the unanimity of legislatively trained minds as to the necessity of legislation, just as soon as the facts in the case were brought to their attention.

7. To obtain any far-reaching results in the way of voluntary labeling would require the maintenance, forever, of an active committee on lye legislation to agitate and to police, in perpetuity, the whole United States to find, from time to time, improperly labeled packages, and to convince successive crops of new concerns, by agitation and by threat of legislation, of the necessity of proper labeling. This alternative to legislation would involve so stupendous a task, and its ultimate results seem so doubtful, that your committee regards it as unworthy of consideration.

RECOMMENDATIONS

1. Your committee recommends that an active campaign be promptly instituted in every state in the Union to obtain both federal and state legislation to protect the children from lye by conspicuous labeling with the word "Poison" in capital letters of not less than 24-point size; two readily obtained antidotes being specified in addition. These are very moderate requirements, to which no right-minded commercial interest could have the slightest objection; and they would be, in the opinion of your committee, a sufficient protection to the public.

2. Your committee begs to recommend that:

(*a*) Its membership be increased by the appointment, by the chairman of the section, of sixteen additional members to be selected from as wide a geographic distribution as possible.

(*b*) That the chairman be empowered to select, from the members so appointed, such subcommittees as may seem to him desirable, and also to select an executive committee with full power to act for the whole Committee.

Respectfully submitted,

CHEVALIER JACKSON,
GEORGE W. MACKENZIE,
FIELDING O. LEWIS.
S. IGLAUER.

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SATURDAY, DECEMBER 15, 1923

THAT ORANGE-COLORED SLIP

The month has rolled around again in which there is slipped into the magazines a notice which usually reads something like this: "Your subscription expires with this number. Please remit." THE JOURNAL likes to be up to date, in fashion; it also believes in economy. So, three or four years ago, it too adopted the plan of inserting a subscription blank. To be strictly honest, the real reason was to save addressing between sixty and seventy thousand envelops, printing the necessary slips to go in them, and then paying Uncle Sam two cents to deliver them. It is so easy to slip a slip into THE JOURNAL. That slip will be found in this issue of THE JOURNAL. It is orange colored, but the color means nothing. The slip is rather small, and may be stuck deep in the pages, in which case it may not be seen. Look for it.

Incidentally, a subscription for *Hygeia* would be a good thing to include in making out the check. Some physicians may think it worth while to send a copy to a patient or friend as a Christmas gift.

DISEASE AS AN AFTERMATH OF WAR

When the war trumpets blow, the peoples must dance. No place so remote, no family so isolated that it may not be affected by a conflict seemingly as outside its sphere of interest as the planet Saturn. War, famine and pestilence ride together as well chosen comrades. Disease is a consequence of modern war as direct and inevitable as bullet wounds.

While it is not possible to predicate in every instance that this or that case of disease would not have occurred but for the war, the general influence of war on the mass phenomena of disease is constantly becoming clearer. There are infections that are contracted in larger proportion among the men in army camps than they would have been among the same men in civilian life. These diseases are spread by the returning soldier, and may reach out in widening circles to the remotest corners of the earth. After the Civil War in this country, typhoid became more prevalent throughout the Northern states, and, if it were possible to trace the exact genealogy of typhoid cases occurring at the present day, we should doubtless find that some typhoid in 1923 owes its origin to typhoid carriers who were themselves infected in an epidemic that resulted from the spread of typhoid which followed the Civil War. If this seems fanciful, one has only to remember the enormous improvement in the typhoid situation caused by breaking the chain of infection at some one point. The antityphoid inoculation of American soldiers in the Great War protected not only the men themselves, but also the uninoculated civilians. For the first time since typhoid was recognized as a distinct disease, a great war has not been followed by a marked increase of typhoid in the nonfighting population. In reckoning the advantages of antityphoid inoculation, this achievement must not be overlooked.

Smallpox is another disease in which a wide dissemination often occurs either during or following a war. The great extension of smallpox in Germany after the war of 1870 is a familiar example. Epidemic meningitis also, which is liable to be excessively prevalent in army camps, showed a marked increase among persons in civilian life in certain localities in this country in 1917-1918. Whether the dissemination of influenza was affected by the war other than through a somewhat more rapid and irregular dispersion than would have taken place in normal times has been a matter of dispute. Nutritional conditions do not seem to have had as much relation to the spread of influenza as sometimes assumed, and it is perhaps doubtful whether the virulence of the 1918-1919 pandemic was in any way connected with the war. The high mortality of measles in some of the army camps does not seem to have affected the death rate from this disease in the surrounding population.

Another type of disturbance of normal disease relations caused by war is the extension of certain more or less localized infections into regions previously exempt. London papers have recently dwelt on the introduction of "tropical malaria" (due to *Plasmodium falciparum*) into South Russia. This infection, brought back by famine refugees, returning from Turkestan, to the Volga Valley and from the Caucasus to South Russia and the Ukraine is said to be altering the whole character of the population. "From a healthy country, inhabited by a virile, energetic peasant and Cossack population, South Russia is changing to a highly malarial center with a corresponding physical degeneration." It is stated that anopheles mosquitoes breed freely in the tightly sealed, overheated peasants' houses in winter, and that the incidence of malaria is very high even in the colder months of the year. The outlook is pictured by certain writers for the press as extremely gloomy. Whatever may be the truth about this particular situation, there can be no doubt that the introduction of new parasites or of their insect hosts into a

previously uninfected region is a possibility that must be reckoned with as an aftermath of war. Other diseases besides malaria obtain a wider distribution in this way. The parasites of amebic dysentery are probably dispersed over a wider area of the earth's surface than ever before. Infectious jaundice, as recently pointed out by Blumer,[1] has usually appeared in this country wherever troops have been concentrated; the disease has apparently increased of late, and in 1920-1922 more than 200 epidemics occurred in New York State alone.

In some instances, the precise share of the Great War in spreading infectious disease may be difficult to trace; but enough is known to make it believable that a wide dispersal of infection is favored by the aggregation of masses of men in camps, by abnormal nutritional conditions, and by the dislocation of social and industrial relations that must follow an armed conflict. Disease knows no boundary of nationality. A tariff does not keep out disease germs. No section of the human race is sufficient unto itself.

THE ETIOLOGY OF NEPHRITIS

With the growing victory over communicable diseases and the decrease in mortality from such causes, there has come a belief that the chronic or regressive class of diseases—those involving the circulatory system and the kidneys and affecting chiefly persons in middle life and old age—has increased in prominence. Nephritis belongs in the latter group. Always a serious menace, the disease, or the category of maladies which the designation represents, has baffled the attempts to gain a clear insight into its etiology. He would be rash, indeed, who ventured to assert that even the fundamental causative features have been established beyond conjecture. Yet in the United States alone tens of thousands of deaths officially charged to nephritis challenge investigation and critical contemplation of the large mass of data accumulated since Richard Bright set apart the nonsuppurative affection of the kidney as a clinical entity.

The complicity of bacteria in the genesis of acute nephritis is generally admitted. Even without overstressing the much discussed relationship of focal infections to nephritis, one must admit that microorganisms can play a damaging part in connection with the kidneys. It matters not for the moment whether streptococci alone are the guilty offenders or whether a diversity of other members of the bacterial family—staphylococci, pneumococci, the bacilli of diphtheria and tuberculosis, for example—are ever indictable. Bacterial injury to the kidney is an acknowledged factor to be reckoned with; and the most defensible presumption is that the bacteria act through poisons which they elaborate rather than by their physical lodgment and multiplication in the renal tissue. With respect to cases of so-called subacute nephritis, however, Newburgh[2] has warned against hasty generalizations. It is not sufficient, he reminds us, to demonstrate the presence of foci of infection in nephritis, for this no more proves that the nephritis owes its origin to the infection than it does that the infection is a complication of nephritis.

With respect to the causation of chronic nephritis, Newburgh[2] has well summarized the two outstanding convictions. They are, he says, that some contracted kidneys are the end stage of an acute or subacute nephritis of bacterial origin, and that nearly all of the remaining cases are intimately related to arteriosclerosis and cannot be properly understood unless the two processes, the sclerosis of the vessels and the sclerosis of the kidneys, are studied together. Newburgh's own experimental investigations both on animals and on man have led him to assume that indulgence in high protein diets will quickly give evidence of renal injury.[3] He believes that man has not yet developed kidneys which can excrete, without suffering injury, the products of a protein ingestion little if any higher than that indulged in by great masses of humanity. If it should prove to be true that the long continued "abuse of protein" makes of the renal apparatus a "locus minoris resistentiae," as Newburgh suggests, it could more readily be understood that such a weakness would greatly increase the likelihood of further damage by infection. Chronic nephritis is comparatively rare among inhabitants of the tropics, yet is common in the temperate zones. It is well known that Europeans and North Americans have been accustomed to consume more protein in the form of animal food than do the native tropical races. Hence, Newburgh asks, may not the excessive protein metabolism of Northern peoples be partly or even largely responsible for the high incidence of chronic nephritis among them? It is a bold venture to assert that chronic nephritis is, generally speaking, caused by the combined effects of infection and abuse of protein. Such a thesis involving factors that are remediable demands respectful consideration. Can it be substantiated?

THE COCKROACH AND CHOLERA

Some of our familiar insect neighbors have acquired an unenviable reputation as trouble makers for the human family since the science of medical entomology was born in 1879. Manson's epoch-making discovery, in that year, of the rôle of the mosquito in the development of filarial worms paved the way for the discovery by Theobald Smith in 1893 of the transmission of Texas fever by the cattle tick, and by Ross in 1898 of the relation between mosquitoes and malaria. Since then the tick and the flea have been charged with responsibility for a variety of infectious maladies, while

1. Blumer, George: J. A. M. A. **83**: 353 (Aug. 4) 1923.
2. Newburgh, L. H.: Medicine **2**: 77 (Feb.) 1923.
3. Newburgh, L. H., and Squier, T. L.: Renal Irritation in Man from High Protein Diet, Arch. Int. Med. **28**: 1 (July) 1921. Newburgh, L. H., and Clarkson, Sarah: Production of Arteriosclerosis in Rabbits by Diets Rich in Animal Proteins, J. A. M. A. **79**: 1106 (Sept. 30) 1922.

the fly has been swatted as though it represented the worst of the enemies to human welfare. Despite the terms of familiarity on which they sometimes live amid our habitations, the bedbug and the cockroach somehow have managed to escape equally severe condemnation from the student of disease. It must be admitted, of course, that the bedbug has had to face numerous accusations of complicity, notably in relation to relapsing fever, kala-azar and oriental sore; but somehow it has managed in most cases to prove an alibi or secure disagreement. Chandler[1] has ventured to explain why the evidence brought forth in support of those insects being the normal transmitters of the diseases in question rests on insecure foundations. Ordinarily bugs, he remarks, are handicapped in the extent to which they are able to spread disease by their nonmigratory habits. Unlike many parasites, they are not usually carried about by human beings, but remain permanently in places occupied by their hosts. It is obvious, therefore, Chandler concludes, that bugs are limited in the spreading of disease to the occupants of the infested place.

The ubiquitous cockroach has been even more successful in escaping the detractor's snare. Now and then it has been accused of some minor offense, such as acting as an intermediate host for certain tapeworms, notably *Davainea madagascariensis*, and the roundworm *Moniliformis moniliformis*. Several years ago, while studying in the Philippines, Barber[2] found that cockroaches feeding on the feces of cholera patients may harbor the cholera vibrios in the insect intestine and discharge them on food for human consumption. The menace of a supposedly water-borne infection thus appeared to be aggravated in an unexpected manner. More recently, Toda[3] has concluded from his investigations at the Lister Institute in London that in a proportion of cockroaches which have consumed food contaminated with *V. cholerae*, the mechanism by which ingested vibrios are rapidly destroyed in the interior of the insect may fail. In such cases the feces may contain viable vibrios for periods of twenty-four, forty-eight or even seventy-two hours after the infective feed. On the whole, however, the conditions in the interior of the cockroach would appear to be as unfavorable to any prolonged sojourn of the vibrio as those in the interior of the housefly when similarly infested. The exact nature of the mechanism whereby delicate organisms such as *B. typhosus* or *V. cholerae* are destroyed in the interior of insects is not fully known, though there is considerable evidence that their survival is influenced by the presence of other bacterial species fully established in the insect hosts.

Toda ventures the opinion that the epidemiologic importance of cockroaches as a possible vector of cholera vibrios under conditions existing on shipboard or elsewhere cannot be overlooked, though the evidence incriminating these insects is purely of an experimental kind. The possible danger seems to apply in particular to vessels in which the cockroach has become the object of suspicion. At the present moment there is some uncertainty as to whether *Periplanata americana, Blatta germanica* or *P. orientalis* is the prevalent traveler. Let us trust that international jealousies with respect to these species will not interfere with the precautionary measures that may be deemed essential.

1. Chandler, A. C.: Animal Parasites and Human Disease, New York, John Wiley & Sons, 1922, p. 377.
2. Barber, M. A.: Cockroaches and Ants as Carriers of the Vibrios of Asiatic Cholera, Philippine J. Sc. **9**: 1, 1914.
3. Toda, T.: Cholera and the Ship "Cockroach," J. Hyg. **21**: 359 (Aug.) 1923.

Current Comment

SICKLE CELL ANEMIA

The only cases of sickle cell anemia recorded in available indexes previous to 1923 were Herrick's,[1] in 1910; Washburn's,[2] in 1911; Cook and Myer's,[3] in 1915, and Mason's,[4] in 1922. The condition was considered to be rare and was imperfectly understood. Herrick made no definite diagnosis of the first case, and drew no conclusions; other writers suggested that it was possibly a clinical entity. Emmel, experimenting on the blood of one of these patients, suggested that the peculiar transformation of cells was partly due to an abnormal activity of factors which, in normal hematogenesis, transform round red blood cells into biconcave disks. A recent report of fourteen new cases by Huck[5] seems to lead to a better understanding of sickle cell anemia. It is, he says, an hereditary disease transmitted by and occurring in males and females with equal frequency, in which the red blood cells acquire a characteristic sickle or crescent shape in vitro, and which is characterized by typical symptoms, especially anemia and ulcers on the legs. In mild cases, patients may live normal lives; but the disease has never been cured. In severe cases, those affected are unable to work and seldom live beyond 30 years of age. There are weakness, fever and pain. The course is a series of relapses and remissions. The diagnosis is established by an examination of the blood, although clinical symptoms may suggest the cause. In several cases in which fresh blood preparations were examined immediately, there was little change in the red blood cells; but when the specimen was sealed and allowed to stand from six to twenty-four hours, from 25 to 100 per cent. of the cells became sickle shaped. After from three days to six weeks' standing, these cells may again assume the spherical form. Long, threadlike projections extended from almost all of the sickle shaped cells after twenty-four hours. The coagulation time in these patients is normal; hemoglobin varies between 30 and 63 per cent., and there is a moderate polychromatophilia. Nucleated

1. Herrick, J. B.: Peculiar Elongated and Sickle-Shaped Red Blood Corpuscles in a Case of Severe Anemia, Arch. Int. Med. **6**: 517 (Nov.) 1910.
2. Washburn, R. C.: Virginia M. Semimonth. **15**: 490, 1911.
3. Cook J. E., and Myer, Jerome: Severe Anemia with Remarkable Elongated and Sickle-Shaped Red Blood Cells and Chronic Leg Ulcer, Arch. Int. Med. **16**: 644 (Oct.) 1915.
4. Mason, V. R.: Sickle Cell Anemia, J. A. M. A. **79**: 1318 (Oct. 14) 1922.
5. Huck, J. G.: Sickle Cell Anemia, Bull. Johns Hopkins Hosp. **34**: 335 (Oct.) 1923.

red cells of all kinds are present, with normoblasts most common. The white cells number from 10,000 to 20,000, and the differential count is not characteristic. Red cells are occasionally seen being engulfed by cells of the large mononuclear type, and it is possible that this phagocytosis has something to do in causing the anemia. The blood platelets are increased to between 300,000 and 500,000. Experiments proved that the serum in these cases has no effect on normal red cells, and that the sickling is an inherent property of the cells. The usual clinical features of anemia may be present, and a slight trauma on the leg may be sufficient to cause ulceration. Attempts to transmit this disease to animals have not been successful. Six other cases, making twenty in all, have been diagnosed but not yet reported. At first thought a manifestation of syphilis or tuberculosis, it was plainly shown to be familial and transmitted according to the mendelian law. All the cases reported have been in negroes, and the disease is evidently more common than was formerly supposed.

THE DIFFUSION OF MEDICAL KNOWLEDGE

Some years ago, an eminent American scientist remarked that his conception of an investigator's heaven was that of a place where experiments could be conducted without serious interruption from day to day, and where it would never become necessary to embody the results in the form of detailed reports. To many students who derive real joy from the work of careful observation, the duty of presenting the outcome in some formal manuscript for publication is unquestionably irksome. Many an important clinical experience has doubtless failed to be placed on record in permanent form because of the inertia of some physician for whom the scalpel has become mightier than the pen. President Vincent of the Rockefeller Foundation has done a real service in pointing out that the rapid contemporary progress in medical research and practical procedures is due to the prompt interchange of information that is recorded in the copious literature of today in many departments of modern scientific medicine. The exchange of ideas is not confined within national boundaries. Obviously, as Vincent [1] specifically points out, international cooperation in creating medical science depends on communication of ideas from worker to worker and from country to country. We are reminded that Hippocrates, Celsus and Galen produced a body of medical literature. Arab authors transmitted it to western Europe. Nor is the intercourse between leaders of science without great value. Medical students from many nations used to resort to the famous schools of Italy, France and Holland. In the nineteenth century the rapid progress of German medicine drew physicians and advanced students from abroad to many German and Austrian universities and clinics. Berlin, Vienna, Paris and London each attracted representatives from parts of the world where medicine was less advanced—southern Europe, Central and South America, the United States, Japan and the British dominions. The formation of international scientific associations has helped to create a sense of solidarity among medical scientists. Since 1867, seventeen international medical congresses have been held in the chief capitals of Europe, and one in Washington. Philanthropists, by granting fellowships for study outside the holders' own countries, by inviting commissions from foreign nations to visit the United States and other countries, and by enabling the health organization of the League of Nations to finance the intermigration of health officers, are helping medical scientists and practitioners of all nations to work together more effectively.

1. Vincent, G. E.: The Rockefeller Foundation, A Review for 1922, New York, 1923.

REPORT OF THE INDIAN SERVICE

The Board of Indian Commissioners has just issued its fifty-fourth annual report to the Secretary of the Interior. It defines what is apparently the government's policy toward the Indian, and toward the progress of education. A special section is concerned with the health and sanitation of the government's Indian wards. In different sections of the report, it is pointed out that for many years the commissioners have tolerated the insufficiency of the Indian Medical Service. The attention of Congress has frequently been called to the paltry salaries of the physicians and to their unattractive living and working conditions. In 1911, only $40,000 was appropriated for health work among the Indians; in 1922, this had been increased to $370,000. In 1913, the death rate was 32.24 per thousand, whereas in 1920 it was 22.33 per thousand. On the other hand, the death rate for the whole country was 13.8 per thousand. The Indian service maintains eighty-five hospitals and tuberculosis sanatoriums. Every year more and more Indians have been seeking hospital treatment, and it is emphasized that a faithful, capable physician, entirely aside from his professional value, is one of the most effective agencies in advancing Indian people on the road of progress. On June 30, 1923, there were 161 physicians, six dentists and three specialists in eye diseases in the Indian Medical Service, of whom fifty-six were contract physicians on part time. The contract service is not satisfactory, and it is the opinion of the commissioners that efforts should be made to reduce the number of such contracts to the minimum. The contract physicians naturally care for their own patients first, and the Indian patients receive attention later. The average salary of a physician in the Indian Service is around $1,200 a year. "Every commissioner of Indian affairs" says the report, "for the past quarter of a century, has urged Congress to raise the salaries of the men and women who look after the health of the Indian wards of the government. But their pleas have been futile." Here, in brief, are the medical aspects of the Indian problem. It is obvious that any physician who holds a position in the service is sacrificing himself for the good of a cause, and that the government cannot expect to receive the best quality of medical service for the money it is willing to pay. There must inevitably be, under such circumstances, a shortage, not only in the number of physicians, but also in the quality of service rendered.

Association News

DATE OF ANNUAL SESSION

Place: Municipal Pier—Time: June 9-13, 1924

The date of the next annual session in Chicago was fixed tentatively as May 19-23, 1924. Later arrangements were made to hold all of the sessions as well as the various exhibits on the Municipal Pier. However, an investigation showed that the temperature during the third week of May for the last five years—except 1921—has been too cool to insure comfort in an unheated building such as the Municipal Pier. It was impossible to select a date during June, because of the uncertainty as to the time of the Republican National Convention, which it seemed likely would be held in Chicago. Now, that it has been definitely announced that the Republican National Convention will be held elsewhere, the Board of Trustees has fixed the date as above stated.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Board of Health Substations.—Nineteen laboratory substations were established in Jefferson County, December 8, by Dr. J. D. Dowling, health officer. These will be known as board of health substations. The majority are located in drug stores.

CALIFORNIA

Professor Millikan Receives Hughes Medal.—Robert A. Millikan, Ph.D., of the California Institute of Technology, Pasadena, recent winner of the Nobel prize for physics, has been awarded the Hughes medal by the Royal Society of London, England.

CONNECTICUT

School of Pharmacy Investigation.—The scope of the grand jury inquiry into fake medical diplomas was widened to include pharmacists when State's Attorney Alcorn announced, December 1, that he is investigating the Connecticut School of Pharmacy at New Haven which advertises, it is alleged, to give a six months' course for $50, which will fit the student for examination by the state board of pharmacy. Only three hours' attendance at school a week is required. High school certificates are not necessary.

Detectives Raid Naturopath School.—Under grand jury order the Blumer College of Naturopathy, Hartford, was raided by detectives, December 3, and the president, four of the faculty and twenty-seven students were taken as witnesses before the grand jury investigating medical frauds. This college specializes in night courses for persons employed in the daytime. An insurance clerk was found to be professor of pathology at the Blumer College. Among the students in training to become doctors of naturopathy is a former hod-carrier, telegraph messenger, carpenter, watchmaker and an ex-window washer. On December 6 the entire state board of naturopathy examiners was summoned to appear before the Holden grand jury.

The Diploma Inquiry Continued.—Following the revocation of the licenses to practice medicine of eighteen "physicians" mentioned in THE JOURNAL last week, the public health council met with the state health commissioner to prepare a list of these men with their photographs to be mailed to the examining boards of every state in the Union in order to prevent their practicing elsewhere. Seven more licenses have been revoked as follows: Raymond C. Prisque of Dayville; Bernard I. Kafka, Bridgeport; Aurelius De Janis, Norwalk; William Feldman, Hartford; Michael M. J'Anthony, Torrington; Samuel Posner, formerly of New Haven, now of Brooklyn, N. Y., and George W. Cotner, Stratford. Plans for a court fight to test the legality of medical license revocations by the state department of health and the constitutionality of the session of the Extraordinary Grand Jury convened in Hartford were made, November 30, in behalf of the eighteen men whose right to practice was previously annulled by the Eclectic examining board. Isador Yochelman, Bridgeport, stated that he would continue to practice, and Peter K. Koraitis announced that he will go to Chicago if stopped from practicing in Connecticut. The Attorney General stated, December 1, that the health department could not legally revoke the licenses unless it was in possession of evidence showing that they procured their licenses by fraud or have been convicted of crime in the practice of their professional business or convicted of felony.

Following the testimony of Governor Templeton regarding the $37,000 alleged legislative slush fund said to have been raised by the "quack" lobby, it is reported that the entire joint legislative committee on public health and safety will be called before the grand jury. State's Attorney Alcorn announced that he now has a witness (a prominent federal government official of Connecticut) who will testify that he saw twenty-four hours in advance of the examinations the list of questions to be asked by the Connecticut Eclectic Medical Examining Board in possession of a physician who has been named in connection with the scandal. This witness will testify the questions were offered for sale by this man.

A letter signed by "Dr." James A. Christian was placed before the grand jury addressed to Dr. Erich von Bradenstein of Cuero, Texas, which read as follows:

"As secretary of the Connecticut Eclectic Medical Association, I am writing you to ask you to please send in your share of the expenses of the past legislature.

"One bill was killed, one passed by the house and senate, but has not been signed by the governor, and I do not think it will be.

"The expense for correspondence, secretaries, attorneys, etc., was very large. Your part of the expenses is $125. Please send me check or money order for this amount at once as these bills have to be taken care of.

"Hoping to have an early remittance by you giving this matter your personal attention and remitting your check, we can straighten this matter out without delay, I remain."

The letter is dated June 18, 1923, and is signed by Christian.

Dr. Frederick R. Ematrudo, New Haven, elected a member of the state eclectic examining board to replace "Dr." James A. Christian, November 28, resigned, November 29. On December 2, Prof. William P. Sachs was in the witness box, as well as Dr. Frederick C. Waite of Western Reserve University School, Cleveland, who recently returned from Missouri where he made a survey of the "diploma mills," recommending the revocation of their charters. Inasmuch as two of the four members of the eclectic examining board are involved in testimony before the grand jury, Mr. Alcorn has refused to divulge to the board any of the evidence adduced. Extradition from New York of "Dr." Sam Kaplan, identified by two witnesses as a St. Louis quack, who, it is alleged, boasted that he had obtained licenses in New York City for nearly fifty quacks, is being sought. Henry W. Nungasser of Burnside, who was summoned before the grand jury, December 5, was licensed by the eclectic board in August, 1893. He stated that he had graduated from the College of Hydrotherapy of Sachsen, Germany, in 1890. In January, 1922, he was arrested by the Hartford police on a charge of performing an illegal operation, was convicted, and sentenced to jail for thirty days and fined $200.

With 200 suspicious death certificates already culled from the state health records—the deaths occurred chiefly in the vicinity of Bridgeport, Norwalk and Stamford—the grand jury has been handed fifty additional cards which detectives are investigating. Another death in New Britain was made the subject of a further investigation of the career of "Dr." James W. Bush, who has been subpenaed. Bush, who was admitted to practice in Connecticut in 1920, holds a diploma from the Kansas City College of Medicine and Surgery. Charles A. Gasson, describing himself as a "chromopath," was arrested at Hartford, November 28. He is already under $10,000 bail on charges relating to his practice. More than $4,000 worth of drugs was seized in a raid at his home.

DISTRICT OF COLUMBIA

Secretary Work's Annual Report.—The first annual report of Dr. Hubert Work, Secretary of the Interior, was made public, December 5. Among other things, additional employees, pupil nurses, and an appropriation of $45,000 for housing facilities for nurses at Freedman's Hospital, Washington, were recommended. Discussing proposed changes in com-

mitment procedure at St. Elizabeth's Hospital, Secretary Work incorporates, in his report, a report from the District commissioners urging commitments without formal trial in court unless demanded by the patients, and "voluntary" commitments whereby patients could be admitted without having to submit to a formal certification of insanity.

Bills Introduced in Congress.—The Pure Milk Bill, which failed to pass the last Congress and which would give the health officer of the District of Columbia authority to safeguard the milk supply, was reintroduced, December 4, by Representative Lampert. The workmen's compensation bill for the District of Columbia, which also failed to pass the sixty-seventh Congress, was reintroduced, by Representative Fitzgerald of Ohio; Representative Gilbert of Kentucky reintroduced his bill, which aims to prevent social disease in the District; a similar but more drastic measure has been presented by Representative Raker of California. A bill to regulate the practice of osteopathy in the District was introduced by Representative Smith of Idaho. Representative Clark of Florida introduced a bill prohibiting the intermarriage of white persons and negroes.

Georgetown University News.—The Georgetown University School of Medicine, Washington, will award a gold medal annually to the member of the Association of American Physicians who has rendered the greatest service in the year to progress and achievement of medical science and preventive medicine, it was announced recently, through the Georgetown Endowment Association in connection with a $16,000 fund established by Dr. George M. Kober, dean for the medical school, in commemoration of the fiftieth anniversary of his graduation in medicine from the university. Under terms of the Kober endowment, there is also established an annual scholarship from the interest of $4,000, preference in the award to be given to residents of the District of Columbia and of Modoc County, California. Another gold medal will be awarded annually to the student of the medical school who attains the highest rating in hygiene. The income from $10,000 will be used in awards for annual lectures in the medical school by distinguished men. The lecturers will be chosen the first and second years from members of the Washington Academy of Sciences, the Medical Society of the District of Columbia and the Association of American Physicians. In the third year the lecturers will be chosen from the medical corps of the army, navy, U. S. Public Health Service and members of the American Public Health Association. More than $500,000 has been raised by the university toward a permanent endowment fund since the campaign started, six months ago.

ILLINOIS

Physicians Fined.—According to reports, three physicians of Harrisburg, Drs. Francis M. Hart, Samuel J. Blackman and Charles W. Walden, were fined $300 each by Judge English in the federal district court, East St. Louis, November 21, when they pleaded guilty to violation of the Harrison Narcotic Law.

Personal.—Dr. Ernest B. Downs has resigned as assistant surgeon at the Danville Soldier's Home, Danville, to take a similar position at the Indiana State Soldier's Home Hospital, Lafayette, Ind.——Dr. Clesson Atherton, formerly assistant managing officer of the Kankakee State Hospital, Kankakee, has been appointed superintendent of the Southern Wisconsin Home for the Feebleminded and Epileptic, Union Grove, Wis., to succeed Dr. Henry C. Werner, resigned.

Chicago

Typhoid Under Control.—The health department has announced that the outbreak of typhoid fever in Chicago is under control. A total of 183 cases has been reported.

Personal.—Dr. Morris Fishbein of the editorial staff of THE JOURNAL delivered a lecture on "Medicine and the Press" before the Medill School of Journalism of Northwestern University, December 6.

Institute of Medicine of Chicago.—At a meeting of the board of governors of the Institute of Medicine the following officers were elected for 1924: Drs. Cassius D. Wescott, president; Isaac A. Abt, vice president; George H. Coleman, secretary, and Joseph A. Capps, treasurer. Dr. Ludvig Hektoen was reelected chairman of the board of governors. Dr. Frank Billings presented to the institute the sum of $10,000 to be apportioned in two funds of $5,000 each known as the Lewis L. McArthur and Ludvig Hektoen funds. The income is to be spent in the promotion of investigation in internal medicine, in the payment of honorariums for lectures before the institute, or for such other purposes as the board of governors may direct. Should the institute at any time give up its charter the money is to revert to a medical school connected with a university in the state of Illinois, to be used for similar purposes.

Society News.—A dinner was given at the Hamilton Club, December 5, in honor of Dr. Martin H. Fischer, Cincinnati, who, following the dinner, read a paper before the Chicago Medical Society.——A joint clinical meeting of the Chicago Society of Industrial Medicine and Surgery with the Illinois Society of Industrial Medicine and Surgery was held in Chicago in place of the regular December meeting, December 3-4. Clinics were held at St. Luke's and the West Side Hospital, December 3, followed by a dinner at the Great Northern Hotel in the evening. December 4, a clinic was presented by Dr. William B. Fisk, chief surgeon of the International Harvester Company at the McCormick works.——The annual meeting and election of officers of the Chicago Post 216, American Legion, was held, December 6. Dr. Joseph E. Rowan, Chicago, was elected commander for the ensuing year succeeding Dr. Patrick J. H. Farrell.——At a meeting of the Society of Medical History, at the John Crerar Library, December 14, Dr. B. Barker Beeson spoke on "Alfred Fournier and the Study of Syphilis" and Dr. George H. Weaver on "Edward Mead: Pioneer Neuropsychiatrist of Illinois."——The Irving Park Branch of the Chicago Medical Society went on record, November 13, as favoring the expulsion of members of the society who are using the Abrams method of diagnosis. The resolution adopted was presented to the council of the Chicago Medical Society.

IOWA

Health Service Course.—The State University of Iowa College of Medicine, Iowa City, has been selected by the U. S. Public Health Service as one of the four universities to conduct a summer course in public health service during the summer of 1924, it was announced, November 27.

LOUISIANA

Maternity Welfare Center.—Plans for the first maternity and infancy health center in Louisiana outside of New Orleans were made at a conference in Baton Rouge, December 7. Dr. Richard L. DeSaussure, of the American Child Health Association, is in charge of the work.

Society News.—At the regular meeting of the Shreveport Medical Society, December 5, the following officers were elected: president, Dr. Willis P. Butler; vice presidents, Drs. I. Henry Smith and E. L. Sanderson; secretary, Dr. Robert T. Lucas, and treasurer, Dr. Lewis Cass Spencer.——The Tri-State Medical Association—Arkansas, Texas, Louisiana—met at Texarkana, December 5-6. Officers were elected as follows: president, Dr. E. A. Chase, Texarkana; vice president for Texas, Dr. Frank Littlejohn, Marshall; vice president for Arkansas, Dr. L. J. Kosminsky, Texarkana; vice president for Louisiana, Dr. Edgar L. Sanderson, Shreveport, and secretary-treasurer, Dr. Frank Walke, Shreveport.

MARYLAND

Baltimore Election.—The Baltimore City Medical Society elected the following officers at a meeting held December 7, in Osler Hall: president, Dr. Gordon Wilson; vice president, Dr. Charles F. Blake; secretary, Dr. John T. King, Jr., and treasurer, Dr. C. Emil Brack.

Memorial Service to Dr. Halsted.—In memory of Dr. William S. Halsted, surgeon-in-chief of the Johns Hopkins Hospital, the Johns Hopkins University and hospital will hold a public meeting, December 16, at "Homewood," the university group. Addresses will be made by Dr. Rudolph Matas, New Orleans; Dr. John M. T. Finney, and Dr. William H. Welch, both of Baltimore.

Personal.—Dr. John M. Nicklas has been appointed medical consultant of the Maryland Tuberculosis Association.——Dr. Julius Bauer, professor in the medical department of the University of Vienna, lectured before the Baltimore City Medical Society, December 7, on "The Endocrine Glands and the Individual Constitution." The discussion was opened by Dr. Lewellys F. Barker and Dr. John C. Hemmeter.

MASSACHUSETTS

Diploma Inquiry Grows.—William E. MacDougall and Joseph C. Jasper of Boston and William Chase of Wakefield have been arrested in the cleanup of irregular chiropractors

by request of the public safety department, it is reported. The charge against the men is failure to possess state certificates to practice. This marks the beginning of a statewide investigation in Massachusetts.

MICHIGAN

Chiropractor Sentenced.—According to reports, Elmer G. Green, Belding, was sentenced to three months in the county jail by Judge Hawley, November 17, for practicing without a license. The judge in pronouncing sentence said that if Green should violate the law again he would get the maximum sentence.

Physicians Guests of Dentists.—The First District Dental Society invited 1,200 physicians and their wives to hear Prof. Elmer V. McCollum, Ph.D., of Johns Hopkins University Medical School, Baltimore, lecture on "The Place of Nutrition in the Program of Preventive Dentistry," December 6, in Detroit. Dr. Arnold L. Jacoby, city psychiatrist, spoke on "Crime and Criminals" at the dinner given in connection with the meeting.

Personal.—Dr. Rollin H. Stevens, Detroit, president of the Radiological Society of America, addressed the Kent County Medical Society, November 14, on "Physiotherapy," at Grand Rapids.——Dr. Eugene S. Thornton, chairman of the board of health of Muskegon, tendered his resignation, November 26, as he will in future reside in North Muskegon.——Dr. and Mrs. Albert B. Grant, Detroit, celebrated their golden wedding, November 19.——Dr. Hugh Cabot, dean of the University of Michigan Medical School, Ann Arbor, addressed the San Francisco (Calif.) Academy of Medicine, December 7, on "Infection of the Kidneys."

Public Health Conference.—The third annual conference of health officers and public health nurses of Michigan, was held in Lansing, December 12-14, under the auspices of the department of health and the state public health association. It also marked the semicentennial of the founding of the first state board of health in 1873. Dr. W. S. Rankin, state health commissioner of North Carolina; Dr. George E. Vincent, president of the Rockefeller Foundation, and Dr. O. D. Kimball, Cleveland, addressed the sessions. It was announced that a goiter survey will be conducted in four selected counties, covering the entire school population.

MINNESOTA

Chiropractors' Certificates Refused.—It is announced that the Minneapolis Board of Education has refused to accept health certificates signed by chiropractors.

Personal.—Dr. Bruce W. Jarvis, Minneapolis, has accepted a position as medical missionary to China under the auspices of the Methodist Episcopal Church.——Dr. Henry M. Bracken, Minneapolis, formerly secretary and executive officer of the state board of health, has been appointed consultant on public health administration with the American Social Hygiene Association, an organization under the National Health Council. His headquarters will be in New York City.——Dr. Maurice G. A. Milan, for the last four and one-half years medical director of the Oakland Park Sanatorium, Thief River Falls, has resigned.

MISSOURI

Personal.—Dr. George P. Ard, state health supervisor of the eleemosynary board, resigned, December 10, to reside in Pennsylvania.——Dr. Walter R. Moore, St. Joseph, has been awarded one of the resident and travel scholarships for physicians given by the American Child Health Association.

Chiropractors Balk at Questionnaires.—Reports of the canvass being made by the police, at the instance of the state board of health, to register all licensed and unlicensed health practitioners in St. Louis, indicated that chiropractors are refusing to fill out the questionnaire on the ground that they are not properly recognized by the state board. The names of the St. Louis chiropractors refusing to fill out the questionnaire will be certified to the health commissioner along with their reasons for noncompliance.

NEBRASKA

Personal.—Dr. Andrew J. Jenison, Harvard, president pro tem. of the house of delegates of the state medical society for the last two years, has retired from active practice.——Dr. J. Jay Keegan of the University of Nebraska College of Medicine, addressed 200 students, constituting the premedical group of the state university, at a dinner, November 9.

Society News.—Drs. Theodore H. Koefoot and Charles L. Mullins, both of Broken Bow, were elected president and secretary-treasurer, respectively, of the Custer County Medical Society at the annual meeting at Broken Bow, November 15.——Dr. Gerald B. Webb, Colorado Springs, Colo., gave a lecture on "Tuberculosis" before the Lancaster County Medical Society, at Lincoln, November 3.——Dr. Bertram W. Sippy, Chicago, was guest of honor at a meeting of the Omaha-Douglas County Medical Society, at Omaha, December 11.

NEW JERSEY

Physician Fined.—According to reports, Dr. Edward Ruberto, carrying an Italian diploma, was fined $25, by Judge Cleary, October 26, for practicing medicine in Bound Brook without a New Jersey state license.

NEW YORK

Physicians Buy Health Resort.—A number of Buffalo medical men of which Dr. Walter S. Goodale, superintendent of the Buffalo City Hospital, is head, have purchased the Jackson health resort at Dansville which was established in 1858 by Dr. James Caleb Jackson, and remained in the Jackson family until the World War when the government took it over.

Milbank Foundation.—Twenty-one classes in home hygiene and care of the sick with 346 in attendance have been organized in Cattaraugus County under the auspices of the Milbank Health Demonstration Fund of New York and the Olean and Salamanca Red Cross chapters. A class of eight Indian women of the Seneca tribe has been organized on the Allegheny Indian Reservation in charge of a Milbank demonstration nurse.

Quacks in New York.—Governor Smith called a conference in the Executive Chamber, Albany, December 7, to discuss measures to protect the people of his state in view of the recent disclosures concerning the diploma mills. Representatives of the state medical society were present. Dr. Matthias Nicoll, Jr., state health commissioner, recommended, December 1, that the medical practice act in New York be amended to make it more effective.

War on quack dentists was officially opened when Attorney General Sherman and Dr. Minor J. Terry, secretary of the state dental board of examiners, began an investigation of all dentists of the state, December 6. Irving Lipton, a dentist of the Bronx, was sentenced to six months in jail for practicing without a license. He had previously been fined $50 for a similar offense. He was a tailor by trade, it is alleged, and had no schooling in dentistry. It is estimated that there are from 500 to 1,000 bogus dentists in New York City alone.

In order to insure protection to the public and prevent them from falling into the hands of fake medical practitioners the Kings County Medical Society of Brooklyn is issuing cards to every one of the 1,700 members of the society, signed by the president and the treasurer, which will serve as a guarantee to the patient that he who presents it is an authorized physician. Before a physician can obtain such a card he must first get a certificate from the county clerk and present it in person to the society.

New York City

Personal.—Dr. Georges Portman, of the University of Bordeaux, arrived in this city recently to lecture in New York, Boston and Philadelphia, Montreal and Quebec.

New York Academy of Medicine Elects.—At a meeting of the New York Academy of Medicine, December 6, the following officers were elected: vice president, three years, Dr. Herbert S. Carter; corresponding secretary, three years, Dr. D. Bryson Delavan; treasurer, three years. The president is elected for a two-year term; Dr. George David Stewart continues to hold this office.

Complaints Against Quacks.—All complaints against unlicensed physicians, dentists, midwives and pharmacists received by the police and health departments and by social agencies will be turned over to the district attorney's office for investigation. This decision was reached, December 6, at a conference of officials of the two city departments and representatives of the Medical Society of the County of New York. The county medical society alone has been investigating an average of two complaints a week of unlicensed practitioners in Manhattan. The district attorney will appoint an assistant to investigate these complaints, and prosecution in special sessions will follow when evidence warrants.

OHIO

Chiropractors Jailed.—According to reports Dr. W. L. Roller and Dr. Eva G. Sauer, chiropractors of Findlay, went to the county jail, November 19, in preference to paying a fine of $25 and costs, for practicing medicine without a license. ——According to reports, J. G. Klein and David A. Stemen, chiropractors of Defiance, were fined $50 and costs each by Mayor Marlatt, November 21, for practicing medicine without a license. The men were jailed on failure to pay the fines.

Hospital Merger.—Announcement has been made that the Seton Hospital and the Good Samaritan Hospital, Cincinnati, both operated by the Sisters of Charity, will merge. The Seton Hospital will be abandoned and a new pavilion erected on the grounds of the Good Samaritan Hospital in the spring at a cost of $500,000. This wing will provide 200 beds and include an outpatient department and a roof garden for tuberculous (bone) cases; an entire floor will be devoted to goiter cases.

OKLAHOMA

State Health Officer Resigns.—Dr. Albert E. Davenport, state health commissioner who, it is reported, was charged with paying former Governor Walton's chauffeur from funds of the state health department, has resigned.

PENNSYLVANIA

Safety Campaign for Industry.—An increase of 35 per cent. in the casualty list of Pennsylvania industry in eleven months of this year, as compared with the whole of 1922, was announced, December 7, by Dr. Royal Meeker, secretary of the state department of labor and industry. This does not include mines and public utilities. Increase of industrial accidents can be attributed in part to a greater number of persons employed, increased production, lack of safety education or adoption of safety methods, and the "let-up of interest in safety."

Philadelphia

Children Honor Leidy.—In connection with the memorial meetings celebrating the centenary of Dr. Joseph Leidy, at the Academy of Natural Sciences and the College of Physicians, more than 350 pupils of the Joseph Leidy Public School assembled on the west side of City Hall Plaza and placed a wreath on the statue of Dr. Leidy.

Maternity Welfare.—A committee was appointed some weeks ago by the Philadelphia County Medical Society to draft measures to reduce the mortality rate among mothers. At a meeting, November 28, it was recommended that the problem be submitted to an organization such as the Rockefeller Foundation for investigation.

Clinics Throughout the State.—Organization of the entire state of Pennsylvania in the war on heart disease and the establishment of "heart clinics" in the leading towns and cities is the program of the Philadelphia Association for the Prevention and Relief of Heart Disease. One "heart clinic" has been established in Pittsburgh; another in Harrisburg and another in Reading. In its two years of existence, the Philadelphia association has established nineteen heart clinics at local hospitals. According to the executive secretary, the mortality from heart diseases has been:

1919	3,123
1920	3,275
1921	3,509
1922	3,803

TEXAS

Physician Sentenced.—Dr. W. B. Pruitt, Glen Rose physician, was sentenced to two and one-half years in the state penitentiary, November 23, when he pleaded guilty to violation of the Volstead Act. Dr. Pruitt will file an appeal.

Health Conference in Mexico.—Dr. William H. Beazley, state health officer, with Dr. Hinkle Garst, director of child hygiene; Dr. John R. Mahone, in charge of border control work, and a sanitary engineer left for Mexico by way of Laredo, November 25, to attend a public health conference by invitation of President Obregon (THE JOURNAL, November 10, p. 1617). The mission spent six days in conference with government officials on yellow fever control and spread of communicable diseases, the infant death rate along the border, violations of the Harrison Narcotic Law and the advancement of sanitation in border towns. Restriction of immigration of persons likely to spread communicable diseases, mosquito control and child welfare work supported by border sections were also discussed.

VIRGINIA

Physician Honored.—At the seventh annual meeting of the Association of Surgeons of the Chesapeake and Ohio Railroad, Dr. William T. Oppenheimer, Richmond, chief surgeon, was presented with an automobile by fellow members of the association.

Puerperal Deaths.—A study of all deaths in Richmond from puerperal causes has been made in the last three years. The white death rate has been gradually reduced in the last sixteen years from 22.2 per hundred thousand in 1907-1911; 20.1 in 1912-1916; 17.9 in 1917-1921 to 10.5 in 1922. The colored death rate from puerperal causes has decidedly increased, being 33.7 in 1907-1911; 42.5 in 1917-1921, and 38.4 in 1922. The death rate from septicemia has decreased from 10.6 per hundred thousand population in 1907 to 6.2 in 1922.

WASHINGTON

Hospital News.—Cushman Hospital, Tacoma, known as U. S. Veterans' Bureau Hospital No. 59, has been enlarged to care for disabled ex-service women in the Northwest. Two buildings have been set aside to care for former nurses, yeomanettes, telephone operators and other women enlisted in the army and navy. One section will be used for tuberculosis cases and the other for psychiatric cases.——A new sixteen bed ward for children has been added to Oakhurst Sanatorium, Elma, under the auspices of the Kiwanians.——Monroe Hospital, Monroe, has been sold by Drs. Charles H. Soll and Herman K. Stockwell to Drs. Allison, Tacoma, and James A. Durant, Snohomish.——A sanatorium has been opened by Dr. Albert Lessing, Leavenworth, at the foot of the Cascade Mountains.——Dr. Leon M. Wilbor has arrived in Tacoma to take charge of the neuropsychiatric U. S. Veterans' Hospital, under construction at American Lake.

WISCONSIN

Society News.—At a meeting of the committee on public policy and legislation of the Milwaukee County Medical Society, November 26, the members favored a plan to protect the public against fake physicians and fake clinics. A subcommittee was appointed to cooperate with public officials and newspapers in bringing to light any questionable methods resorted to by practitioners.

CANAL ZONE

Bottled Milk for Zone.—A shipment of 20,000 bottles of milk to be sold at cost to milk dealers of Colon and Panama has been received by the health department of the Panama Canal. This action was taken in order to insure that only bottled milk will be sold in the terminal cities and in the Canal Zone.

Hospital News.—Capt. Henry J. Hayes, M. C., U. S. Army, has been assigned to duty at Corozal Hospital; Major J. M. White, M. C., U. S. Army, at the Ancon Hospital, and Lieut.-Col. S. J. Morris, M. C., U. S. Army, has reported for duty as department medical inspector and assistant to the department surgeon, Col. Henry Webber, M. C., U. S. Army.——Weekly clinical meetings are held at the Ancon Hospital, on Thursdays, and once a month there is a journal review at which résumés of recent medical literature are presented. Visiting physicians are always welcome. Attendance at the clinical meetings consists of representatives of the Medical Corps of the Army and of the Navy, the U. S. Public Health Service and the local health officials and medical profession.

PHILIPPINE ISLANDS

Epidemic of Anthrax.—According to reports 1,000 carabaos (water buffalo) have died from anthrax in central Luzon during the last few weeks, which seriously interferes with agricultural activities. The Philippine government has assigned every available veterinarian to work in the area in which the epidemic is raging and the United States has been requested to detail troops to assist in the enforcement of quarantine regulations.

CANADA

Canada's Opinion of E. R. A.—The *Canadian Medical Association Journal* in a reply to an inquiry about the electronic reactions of Abrams states that in their opinion "the use of Abrams' machine by members of the medical profession, other than for the purpose of investigation and experimentation, is

unjustifiable and unethical; and that exploitation of the machine for personal and financial gain is gross quackery and fraud."

Personal.—Dr. Samuel Hanford McKee has retired as secretary of the Montreal Medico-Chirurgical Society following seventeen years' service. Members of the society presented Dr. McKee with a gold fountain pen.——Professors Archambault and Fournier are giving a course of lectures on "The Treatment of Venereal Disease" at the Notre Dame Hospital, Montreal.——Dr. V. M. MacDonald, director of the Child Welfare Association of Montreal, was selected as one of the Canadian delegates to the American Child Health Association Convention in Detroit.——Dr. Thomas J. W. Burgess, since 1890 superintendent of the Protestant Hospital for the Insane at Verdun, has retired as active manager of the institution. Dr. Carlyle A. Porteous will succeed him.——Dr. John Copeland has been appointed assistant superintendent of the Montreal General Hospital to succeed Dr. Donald C. Smelzer who has gone to Buffalo, N. Y., to assume the post of assistant superintendent of the General Hospital there.

GENERAL

Notice of Change of Address.—Physicians are reminded that it is necessary under the present law to notify the collector of Internal Revenue, narcotic division, of any change in office address. Failure to do so means a fine of 25 cents for each month passed since removal, and an additional fine at the next registration to prescribe narcotics.

Prize for Scientific Work.—The American Association for the Advancement of Science announces that to mark the seventy-fifth anniversary of the association, a member has donated $1,000 to be awarded as a prize to the author of a paper containing a notable contribution to the advancement of science, presented at the Cincinnati meeting either before the association or before one of the affiliated societies.

Western Surgical Association.—At the annual meeting of the Western Surgical Association at Colorado Springs, Colo., December 6-8, the following officers were elected: president, Dr. Donald MacCrae, Jr., Council Bluffs, Iowa; vice presidents, Drs. Lewis H. McKinnie, Colorado Springs, and Edmund D. Clark, Indianapolis, and secretary-treasurer, Dr. Harry P. Ritchie, St. Paul. French Lick Springs was chosen as the meeting place for the 1924 convention.

Tri-State Medical Meeting.—At the annual meeting of the Tri-State Medical Society of Arkansas, Mississippi and Tennessee, held at Memphis, Tenn., November 20-22, under the presidency of Dr. Carl M. Harwell, Osceola, Ark., the following officers were elected for 1924: president, Dr. Landon A. Yarbrough, Covington, Tenn.; vice presidents, Drs. T. J. Stout, Brinkley, Ark.; William H. Anderson, Booneville, Miss., and Benjamin C. Arnold, Jackson, Tenn. Drs. Arthur F. Cooper and James A. Vaughan, both of Memphis, were reelected secretary and treasurer, respectively.

National Research Council.—The following resolutions were passed by the council at the meeting of the interim committee recently:

WHEREAS, An accurate knowledge of thermal effects connected with chemical processes is of the highest importance to the chemical and metallurgical industries, and whereas there does not exist in this country at the present time any bureau, laboratory or other organization devoted to investigations in this field; therefore be it

Resolved, That the National Research Council, acting on the recommendation of the division of chemistry and chemical technology, direct the secretary to bring this matter to the attention of the director of the U. S. Bureau of Standards and urge him to create within the bureau a laboratory which shall be devoted primarily to research in this field; and further, be it

Resolved, That the National Research Council assist and support the director of the Bureau of Standards in any efforts which he may make in this direction.

New Methodist Hospitals.—The Methodist Episcopal Church announces that more than $16,000,000 has been added to the properties and endowment of the hospitals, children's and old people's homes of the church since 1920. During the last year the total value of buildings dedicated was $3,450,000, and the value of buildings nearing completion is $2,445,000. Nearly $2,500,000 was raised in special campaigns during the last year. The church has today eighty-one hospitals, forty-four homes for children, thirty-nine homes for the aged and eleven other institutions of a total valuation, with endowment, of $40,000,000. During the last year 4,000 orphans and half-orphans were cared for and 1,800 men and women. Many of these hospitals are in districts where before their construction there were no such institutions within a range of 100 to 200 miles.

Society News.—The American Sanatorium Association will hold a meeting in Philadelphia, December 14-15, devoted to treatment. Among the speakers will be Dr. Lawrence F. Flick, founder and director for many years of the White Haven Sanatorium, White Haven, Pa., and Dr. T. Miller Tyson, director of the Rush Hospital for Consumptives, Philadelphia.——The fourth annual meeting of the Association for Research in Nervous and Mental Diseases will be held in New York City, December 27-28, under the presidency of Dr. Walter Timme.——Section N, medical sciences, of the American Association for the Advancement of Science will meet at Cincinnati, December 29. The morning program consists of a symposium on "Interrelated Problems of Medical Workers" and the afternoon session a symposium on the "Endocrines." Among the speakers will be Dr. Richard P. Strong, director of the department on tropical diseases, Harvard University, Boston; Prof. Henry B. Ward, University of Illinois; Dr. John R. J. MacLeod, University of Toronto, Canada, and Dr. George W. Crile, Western Reserve University, Cleveland.

Death of William Whitford.—Two hours after his return from reporting the meeting of the Western Surgical Association at Colorado Springs, Colo., Mr. William Whitford, for thirty-four years official medical stenographer for the sessions of the American Medical Association, state, district, county and international societies, died suddenly in Chicago, December 11, of myocarditis, at the age of 66. At the sessions of the seventy-fourth annual meeting of the American Medical Association in San Francisco last June, resolutions were passed praising the work of Mr. Whitford in reporting thirty-four consecutive meetings of the Association and the proceedings of the House of Delegates ever since its organization. A rising vote of appreciation in recognition of his services was extended by the House. At the last meeting of the Tennessee State Medical Association Mr. Whitford was made an honorary member of the society. He was passing through Chicago on his way to White Sulphur Springs, Va., to report the meeting of the Southern Surgical Association. Mr. Whitford with his quiet retiring manner, was liked and respected by all who knew him.

At its regular meeting held December 12, the Executive Committee of the Board of Trustees of the American Medical Association adopted the following resolution:

"Mr. William Whitford, who for many years, served as the official stenographer at annual sessions of the House of Delegates and at various Sections and Committees of the Association, died suddenly at his home at Oak Park, Illinois, on Monday, December 10. The Executive Committee of the Board of Trustees and the officials at the headquarters of the American Medical Assocaton wish to place on record in the minutes of the Board a sincere expression of the respect and regard for the long and efficient services which Mr. William Whitford rendered the Association, and also for his manliness and high character."

Death Rates for 1922.—The Department of Commerce announces that compilations made by the Bureau of the Census show a mortality rate for the registration area of 11.8 in 1922 against 11.6 in 1921 per 100,000 population. Six states—Michigan, Mississippi, Ohio, Pennsylvania, Virginia, Wisconsin—show lower mortality rates for 1922 than for 1921. The lowest 1922 state rate (8.1) is that of Idaho and the highest (14.7) that of Maine and Vermont. The lowest rate for cities which at the last census had populations of 100,000 or more was that of Akron (7.5); the highest (17.8) that of Memphis. Crude rates by no means tell the whole story regarding the healthfulness of different localities. Occupations, race stock, the sex and age distribution of the population, and the relative number of deaths of nonresidents must be determined before one city or state can be considered more healthful than another. For example, death rates adjusted for the age and sex composition of the populations in different states, show what the death rate would be if all states had the same proportion of males and females, and the same proportion of the total population in each age group. Thus adjusted the 1922 rates are lowest (9.1) for Nebraska and highest (13.5) for Colorado; while for cities the lowest adjusted rate (9.2) is for Akron; the highest (19.3) for Memphis.

Office of Prohibition and Narcotic Information.—Drugs valued at approximately $500,000 seized by narcotic agents throughout the country during the last three months, and which have no value for medicinal purposes, were destroyed, November 20, by a committee appointed by the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury. The drugs destroyed include diacetylmorphin hydrochlorid (heroin), coca leaf powder, opium, morphin tablet tritulates, codein, ethyl morphin hydrochlorid (dionin), codein phosphate, cocain hydrochlorid, morphin, gum opium, paregoric, laudanum, toothpastes made largely of cocain, eye salves containing cocain and morphin, and other preparations

containing narcotic drugs. Under the law, every three months the narcotic agents in charge list drugs which have been seized, and ship them to the head of the Narcotic Division. These drugs are forfeitable to the government under the law after the seizure has been analyzed and has served its purpose in court. In pursuance of law, all of these narcotic drugs which are not fit for medicinal purposes are disposed of by the duly appointed committee, after they have been carefully checked. Such drugs as are fit for medicinal purposes are turned over to the Public Health Service for use in the various institutions and hospitals throughout the country.

The President's Message.—The message of President Coolidge touched on two points of definite interest to the medical profession. It apparently is the purpose of the President to carry out the program of the late President Harding with reference to the reorganization of the various departments and bureaus of the government on a more efficient basis than at present. In his message, the President said:

"A special joint committee has been appointed to work out a plan for a reorganization of the different departments and bureaus of the government, more scientific and economical than the present system. With the exception of the consolidation of the War and Navy departments and some minor details, the plan has the general sanction of the President and the Cabinet. It is important that reorganization be enacted into law at the present session."

He also recognized the problem presented by the education of physicians for the negro, about which he said:

"Already, a considerable sum is appropriated to give the negroes vocational training in agriculture. About half a million dollars is recommended for medical courses at Howard University to help contribute to the education of 500 colored doctors needed each year. On account of the migration of large numbers into industrial centers, it has been proposed that a commission be created, composed of members of both races, to formulate a better policy for mutual understanding and confidence. Such an effort is to be commended. Every one would rejoice in the accomplishment of the results which it seeks. But it is well to recognize that these difficulties are to a large extent local problems which must be worked out by the mutual forbearance and human kindness of each community. Such a method gives much more promise of a real remedy than outside interference."

Comment on Connecticut Medical Licensure Scandal.—As was pointed out in THE JOURNAL last week, one of the most significant results of the present scandal in medical licensure has been the turning to it of the editorial attention of the press. Suddenly, the evils to which THE JOURNAL has repeatedly called attention for years, have begun to receive the public attention that may possibly result in their removal. Newspaper comment has, in general, been a recognition of the way in which the medical profession has endeavored to purge itself of the unqualified and disreputable.

The New York *Evening Post* was prompt to credit the American Medical Association with its important work. It discerns "a striking lesson in the propriety of setting up a single state examining board, and asking the medical profession to keep an eye upon its standards. Connecticut has had six boards, with a resulting lack of responsibility." And, the *Post* continues:

> Standards of medical education in the United States are now at a safe height. School after school, state board after board, has adopted the rule that two years' collegiate work shall be required before admission to the medical course, till it is in general force. The American Medical Association and the Council on Medical Education declared in 1916 for a standard of four years' actual medical training, followed by one year in hospital, and this has been widely accepted. But we still have to guard against scoundrels who are outside the law, and against representatives of various pseudoscientific "isms" who try to climb over the law.

The *British Medical Journal*, in its issue for December 1, commenting on this exposé of conditions that have existed in this country, closes its editorial:

> The Journal of the American Medical Association has long carried on a very spirited fight against the degradation of the profession of medicine by quackery, licensed and unlicensed. In one respect reformers in the United States are worse off than we are, because the licensing of practitioners of medicine is not a national matter, but one reserved to each state of the Union. The Journal, however, has pegged away, and one legislature after another has been convinced until now the backward states can be counted on the fingers of one hand.

The Boston *Transcript* recognizes that responsibility rests clearly with the state:

> The quack, to be sure, we shall no doubt always have with us. There will always be a numerous class of sufferers who prefer the charlatan. No state can endow its citizens with common sense. But the state can at least prevent such wholesale exploitation of the credulity of the ignorant as now prevails.

The Pottstown, Pa., *News* seems to have considered the physician's point of view, primarily pointing out that it is the duty of the state to protect its public and its honest medical profession.

> In rounding up the quack doctors who are practicing under the diplomas of fake medical schools, the state authorities are doing the public an important service, even though somewhat belated. The qualified physician spends years in preparation for his work. . . . Very often he works without pay. His certificate of graduation and his state license are his guarantees of good faith with his patients. Any wonder, then, that he should feel that when the state permits an illegal or fake practitioner to practice "right under his nose" there is something wrong and unjust about it? Why should he have been required to spend years in college and in training at great expense and personal sacrifice, while this irresponsible person can go about with but a few months' preparation and a certificate from a fake medical school and rake in the sheckels from those who are led to put their belief in him?

The Pennsylvania *Inquirer* sees in the present scandal another exemplification of the gullibility of the public.

> Americans are greatly given to experimenting on themselves in cases of illness, real or imaginary. Nowhere do "remedies" for this or that disorder have a wider and more indiscriminate sale. Many are never happy without this self-dosing. The medical profession is laying stress in these days upon the prevention of disease by the obervance of sanitary laws and avoiding so far as possible the use of drugs. But thousands of otherwise intelligent persons cling to the habit of "taking something" whenever their physical condition is below par.
>
> That is one reason—perhaps the chief reason—why quackery flourishes. People not only prescribe for themselves, but they also let any one who makes a pretense of knowledge prescribe for them.

The Chicago *Evening Post* points out the fact that Illinois has had its medical scandals in the past, and that states must be ever vigilant to prevent the inroads of impostors, and says:

> The outcome of the Connecticut investigation may serve to impress on the public generally the importance of supporting the medical authorities in efforts to rid the profession of those not qualified for the practice of medicine. The public and its representatives in legislatures and Congress should endeavor to make rigid the safeguards which should be thrown around the medical profession. The promoter and distributer of fraudulent securities are punished for mulcting the investor of his savings, and even more drastic penalties should be imposed upon the unscrupulous who trifle with human life.

What should be the remedy? In New York State, the health commissioner has proposed annual registration as a method of controlling medical practice. While this method has some advantages, it is also subject to most serious disadvantages. Indeed, the New York *Mail* feels that it is unfair for the state to place an additional burden on the medical profession, when it is the duty of the state to protect the profession:

> If the quack will take a chance on practicing without a state license now, he will be apt to take a chance on the registration system. His patients have no means of checking up his conduct in this respect, and his chance of escaping detection would seem to be neither worse nor better than they would be at present if systematic watch were kept up by health boards and the local medical organizations.
>
> But to the reputable practitioner the annual license is an insult and a nuisance. Why should he be singled out for such aggressions? Already he is under many vexatious requirements imposed by drug and liquor laws, and he does a considerable amount of statistical work for the state gratis. These may be necessary incidents of his calling, but at least they should be limited as far as possible. To inflict a new obligation on ten thousand honorable men on a vague chance of catching one crook seems hardly fair.

The New York *Times* considers the provision of a single nonpartisan, nonpolitical board in each state the factor of primary importance:

> In no state should there be more than one medical examining board, and that one alone should issue licenses to practice medicine. . . . Not one of the men licensed by such a board would claim universal efficacy for any form of treatment. Whoever does that is instantly revealed as a quack, either ignorant or dishonest, and he is not any the less a quack because he can produce "testimonials" from grateful patients, including the familiar legislator whose close relative was saved from fast approaching death by an "irregular" after he, or more often she, had been given up by anywhere from one to a dozen "regular" doctors.

The Louisville *Herald* recognizes the importance of educating the public to understand the difference between scientific medicine and the vagaries of the cults:

> The remedy for quacks lies quite as much in a more enlightened human nature as in a rigid inspection. The protection of properly qualified medical boards of examination goes a long way, but the public must do its share. The requirements of such boards cannot well be too high, nor their vigilance too alert. . . . There are numbers of people who seem to take delight in "cures" and proceed from one fake to another. For them we fear there is no remedy. They are, as it were, addicts and beyond hope.

We must not forget to quote the *Christian Science Monitor*, which, as might have been expected, makes the present incident an occasion for attack on the entire medical profession. It emphasizes the widely heralded statement of one of the men under indictment that there are "25,000 quacks scattered throughout the country," and it continues:

> But chief interest will center in the involuntary confession, circumstantially made, that physicians of the "regular" school stand ready to condone and cover up the mistakes of all their brethren whom they assume to be authorized to "practice" upon their confiding victims. In this willingness to overlook "professional" mistakes, the public sees a tendency as menacing, perhaps, as that offered by so-called quacks who buy their credentials from diploma mills and their practice from established physicians.

LATIN AMERICA

Inauguration of the Peruvian Medical Society.—The *Reforma Médica* hails the foundation of the Círculo Médico Puruano as the third great milestone in the progress of the profession in Peru. The two others were the erection of the medical school in 1856 and the foundation of the Academia de Medicina in 1887.

FOREIGN

Plague in Constantinople.—The presence of plague is officially announced in Constantinople, Ecuador and Peru. The cases are not numerous.

Pro Leprosis.—This is the name of a new international society founded by Prof. V. d'Amato, of the chair of dermatology at Rome, to aid those who are willing to aid lepers in any country. Amato asks for suggestions, contributions and assistance in propaganda. His address is via Cesare Battisti, 133, Rome.

Span of Life in Japan.—A pamphlet entitled *Primary Lessons in Hygienics,* compiled by the foremost professors by order of the government, and recently issued by the Japanese Department of Home Affairs, announces that statistics show that the average life of a Japanese is as low as 30 years, while that of the European is 50 years.

Medical Days.—The success of the Brussels' "Three Medical Days" has inspired Lisbon to a similar enterprise. The *Medicina Contemporanea* announces that a "National Medical Week" is being organized at Lisbon, when the hospitals and clinics will welcome medical guests, and authorities will lecture on recent progress in medicine.

Memorial to Roentgen.—At a meeting of the British Roentgen Society, recently, it was agreed that in order to commemorate the work of the late Professor Roentgen an annual award of $50 (or its equivalent in books or apparatus) shall be presented to the member of the society whose contributions during the session relating to the science or practice of medical or general radiology, are most distinctive.

Centenary of Medical Book Club.—A dinner was held, November 14, in celebration of the hundredth anniversary of the foundation of the Lancaster (England) Medical Book Club, which was founded, Nov. 11, 1823. The original minute book was shown containing the following: "It is expedient to establish a society to be called the Lancaster Medical Book Club to consist of the gentlemen present and such other medical gentlemen resident in Lancaster as shall hereafter be elected."

Seventy-Fifth Anniversary of Belgian Medical Journal.—On the recent seventy-fifth anniversary of the foundation of the *Scalpel,* it was planned to offer a tribute of appreciation to Dr. L. Dejace who has been editor and manager for forty years. His portrait in oils will be presented to him, and all subscribing 10 francs or more to the fund will receive a large photograph of the portrait. The ceremonies are to include a banquet. Dejace is honorary president of the Féderation médicale belge.

Trachoma in Indo-China.—Reports from the French Ophthalmic Hospital, Hanoi, Tonkin, state that from 1917-1920 a large increase (in comparison to other diseases) in the number of trachoma cases coming for treatment was noticed. During that period 16,625 operations were performed, and of these 13,576 were for trachoma and its complications.——In Annam trachoma furnishes 36 per cent. of the outpatients, 50 per cent. of the inpatients, and 69 per cent. of the operations, and easily ranks first as a cause of blindness.

University News.—At a special meeting of the University of Glasgow, Scotland, Court, presided over by the Lord Rector, the establishment of the Samson Gemmell chair in medical pediatrics was approved. The chair is to be associated with the Royal Hospital for Sick Children.——The appeal for a quarter of a million pounds to erect the new science wings of the University College of South Wales and Monmouthshire at Cardiff, has resulted in £156,000 ($700,000) being subscribed. Lord Glanely gave £10,000 and Sir David R. Llewellyn, £28,000.

Anthrax in Australia.—The first case of anthrax infection in man to be reported in Australia was in 1917; since then thirty-two others have been reported. Of the thirty-three cases reported, thirty-one occurred on the shaving area; two on the forearm were traced to infected goatskins. The majority of infected brushes entered the country from Japan. Importation of brushes from certain countries was then prohibited. Japan agreed to guarantee disinfection and the embargo was lifted. No cases of anthrax has been traced since to imported brushes.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 26, 1923.

Insanity and Criminal Responsibility

For many years the defense of insanity in cases of crime have given rise to acute differences of opinion in the courts. Judges follow the McNaughton rules, so called because they were laid down half a century ago by a legal committee in consequence of the plea of insanity in the case of McNaughton. These rules make the criminal responsibility of a prisoner depend on the answer to two questions: Could he distinguish right from wrong? Did he know the nature of the act with which he is charged? Psychiatrists have uniformly contended that these tests are too narrow and are out of date, as they take no notice of uncontrollable impulse arising from mental disease. This defense is very repugnant to the legal mind, and judges have regarded it almost as an attempt to assume insanity because some heinous crime was committed. In the words of one luminary, they "refuse to take the law from Harley Street." A committee was therefore appointed by the government to consider what changes, if any, are desirable in the existing law when the plea of insanity is raised. The committee, which consisted entirely of judges and eminent lawyers, has presented a report which must be regarded as a victory for the medical profession. The committee recommends that it be recognized that a person charged with an offense is irresponsible when the act is committed under an impulse which he was by mental disease deprived of any power to resist. Save as above, the rules in McNaughton's case should be maintained. When a person is found to be irresponsible on the ground of insanity, the verdict should be that the accused did the act (or made the omission) charged, but is not guilty, on the ground that he was insane so as not to be responsible, according to law, at the time. Accused persons should not be found on arraignment unfit to plead except on the evidence of at least two physicians, save in very clear cases. Provision should be made for examination of an accused person by an expert medical adviser at the request of the prosecution, the defense, or the committing magistrate.

MEDICAL VIEWS AT VARIANCE

Evidence was given on behalf of the British Medical Association and the Medico-Psychological Association. Unfortunately, the views of these two bodies were, on the main question, in opposition. The British Medical Association would retain the existing law with a modification as to lack of control; the Medico-Psychological Association would sweep away the present rules and substitute other questions for the jury. The committee could not accept the recommendation of the Medico-Psychological Association and concur with the views of the British Medical Association. The conclusions arrived at by the Medico-Psychological Association were: 1. The legal criteria of responsibility expressed in the rules in McNaughton's case should be abrogated and the responsibility of a person should be left as a question of facts to be determined by the jury. 2. The judge should direct the jury to answer the questions: (*a*) Did the prisoner commit the act alleged? (*b*) If he did, was he at the time insane? (*c*) If he was insane, has it nevertheless been proved to the satisfaction of the jury that his crime was unrelated to his mental disorder? One of the difficulties of the committee as to this view was that the Association gave no clue as to what it regarded as the test of criminal responsibility. It regarded insanity and irresponsibility as coextensive. All the witnesses were, in substance, agreed that the effect of *c,* which threw

on the prosecution the onus of satisfying the jury that the act of the person found to be insane was "unrelated" to his mental disorder, would be to cast a burden which could not be discharged, and that the question was otiose. The vagueness of the term "unrelated" was pointed out; and the phrase eventually was altered to "the mental disorder was not calculated to influence the commission of the act"; but the difficulty of proof was not altered by the turn of the phrase. The far-reaching effect of granting immunity to every one who could be said to be of unsound mind was perceived when the medical conception of unsoundness of mind was considered: "Unsoundness of mind is no longer regarded as in essence a disorder of the intellectual or cognitive faculties. The modern view is that it is something much more profoundly related to the whole organism—a morbid change in the emotional and instinctive activities, with or without intellectual derangement. Long before a patient manifests delusions or other signs of obvious insanity, he may suffer from purely subjective symptoms which are now recognized to be no less valid and of no less importance in the clinical picture of what constitutes unsoundness of mind than the more palpable and manifest signs of the fully developed disorder which may take the form of delusions, mania, melancholia or dementia."

THE QUESTION OF PUNISHMENT

The committee holds that "the existing rule of law is sound; that a person may be of unsound mind and yet be criminally responsible. A crime no doubt implies an act of conscious volition; but if a person intends to do a criminal act, has the capacity to know what the act is, and to know the act is one he ought not to do, he commits a crime. Whether he should be punished for it is not necessarily the same question. Two of the objects of punishment are to deter the offender from repeating and others from committing the offense. If the mental conditions presupposed exist, punishment may be fairly inflicted. It is probable that the offender and others will be deterred.

UNCONTROLLABLE IMPULSES

It was established to the satisfaction of the committee that there are cases of mental disorder in which the impulse to do a criminal act recurs with increasing force until it is uncontrollable. Thus, cases of mothers who have been seized with the impulse to cut the throats of, or otherwise destroy, their children, to whom they are normally devoted, are not uncommon. In practice, the accused is found guilty, but insane. In fact, the accused knows the nature of the act, and that it is wrong; and the McNaughton formula is not logically sufficient. Such cases should be brought expressly within the law by decision or statute. The question to be determined should be, not whether the accused could control his conduct generally, but could control it in reference to the particular act or acts charged. Lack of control would be relevant to the question whether the lack of control in the particular case was due to mental disorder or to a mere vicious propensity.

FORM OF VERDICT

Juries are frequently, for brevity, instructed to return, if the facts warrant it, a verdict of "guilty but insane." This seems illogical. The verdict is one of acquittal. An accused cannot be "guilty" of a physical act which is not in itself an offense. The word "guilty" in criminal trials should connote only criminality, the commission of a crime—the very thing which on the finding as to the state of mind of the accused is negatived. When insanity is such as to produce irresponsibility, the accused is entitled to a verdict of acquittal of crime.

Cyanid Fumigation

Fatalities have been recorded from time to time among persons engaged in cyanid fumigation. The ministry of health has had an investigation made by Dr. Richard J. Reece, the senior medical officer of the branch concerned with port sanitary administration. He visited the United States and also made inquiries in Holland and other European countries. He has presented a report in which he concludes that, whatever precautionary regulations are made, the safety of persons engaged in cyanid fumigation on board ship can be insured only by using a fumigating machine scientifically designed with full knowledge of the difficulties to be overcome. As the efficiency of cyanid fumigation for the destruction of rats and other vermin, the report leaves no doubt. But the law of diffusion of gases, and experiments carried out, point to the conclusion that the complete mixing of two gases by diffusion is a matter, not of minutes, but of hours. Analysis of samples of gas taken in different parts of a ship at various times during fumigation show that diffusion may be incomplete and that for thorough fumigation of large spaces it may be necessary either to increase the number of points at which the gas is generated or to arrange for artificial circulation. As diffusion is slow, the clearing of a ship from gas must depend almost entirely on the movement of air currents in the manner of ordinary ventilation. In certain circumstances it might be very difficult to clear the gas by natural ventilation without the use of fans, and pockets of gas might remain for many hours or even days in the lower part of the ship. It is therefore necessary to test the progress of ventilation systematically by means of rats or other methods, and it is dangerous to assume that a certain number of hours is sufficient for clearing under all conditions.

Comparative Death Rates and Infant Mortality

In reply to a question, the minister of health has given the following figures, which show how much we are in advance of other European countries:

Death Rate and Infant Mortality Rate of England and Wales and of Four Continental Nations

	1918	1919	1920	1921
England and Wales:				
Death rate	17.6	13.7	12.4	12.1
Infant mortality rate	97	89	80	83
Germany:				
Death rate	24.9	15.5	15.0	——
Infant mortality rate	154	121	131	134
Spain:				
Death rate	33.0	22.7	23.0	21.1
Infant mortality rate	183	156	165	147
France:				
Death rate	22.0	19.3	17.3	17.7
Infant mortality rate	140	123	99	115
Austria:				
Death rate	26.5	20.5	18.9	16.9
Infant mortality rate	193	156	147	

Research Expedition to Samoa

An important research expedition, arranged by the London School of Tropical Medicine to study in Samoa the prevention of filariasis and associated conditions, especially elephantiasis, has left England en route for New Zealand via Panama. The leader is Dr. P. A. Buxton, a physician and well known entomologist, and he is accompanied by G. W. Hopkins of Downing College, Cambridge. In New Zealand they hope to add to the expedition one or two medical students, who will be given the opportunity of studying under the best tutelage some of the problems which their government has to face in connection with its mandate over Samoa. The expedition hopes to demonstrate that the infection of man by the mosquito carrier of the filaria can be prevented by clearing away all the undergrowth round the masses of coconut palms, destroying the broken shells, thrown on one side in making copra, which harbor water, and by destroying the rhinoceros beetle, which drills into the trees, making holes that retain moisture in which the mosquito breeds. The natives will meanwhile be supplied with water from uncontaminated cisterns. Elephantiasis is largely responsible for the apathy and lack of initiative of the Polynesians, making

necessary the introduction of Chinese and Indian labor. The influenza epidemic carried off nearly a third of the people of Samoa; tuberculosis is increasing, and measles usually is fatal. All these problems are to be studied by the expedition, as well as the dysentery epidemic, which has been severe this year. It is hoped to arrange for the training of two or three women in each village in infant welfare work. Especially important will be the researches, hardly ever undertaken, into the effect of high atmospheric temperature and moisture on Europeans. Dr. Buxton also hopes to study the birds of Samoa and bring home a didunculus, a relative of the extinct dodo, which still survives in one area. A careful selection of entomological specimens will also be made.

PARIS

(From Our Regular Correspondent)

Nov. 23, 1923.

The Activities of the Optical Institute

Before the war, France was dependent on importation for its optical instruments, and Germany supplied 70 per cent. of our needs. The consequence was that, in 1914, the French optical instrument industry was not in a position to keep up with the heavy demand for optical instruments needed for national defense by the army. Impelled by necessity, France succeeded in organizing, in the midst of the war, an intensive production of instruments of precision. The geographic service of the army served as a clearing house for army orders, and in turn coordinated the efforts of the French manufacturers and distributed the orders among them. Thus the monthly production of optical lenses was increased from 4,000 kilograms in 1914 to 12,000 kilograms in 1918, or about 80 per cent. of the total production of the allies, a good result in view of the hasty character of the preparations. But a more stable organization was needed in order that France might manufacture instead of import the instruments for laboratories, factories and workshops. Convinced of this necessity, a group of leaders in science and industry, headed by M. de Gramont de Guiche, began to agitate for the creation of an optical institute to supply the optical industry with engineers and technically trained workmen, and to offer to manufacturers, when needed, the aid of its scientists and laboratories. Thus was created the Institut d'optique théorique et appliquée, the beginnings of which were announced in previous letters (THE JOURNAL, Sept. 20, 1919, p. 925, and May 8, 1920, p. 1339). At present, this institute is functioning very successfully. It is located at Boulevard du Montparnasse, No. 140; but, as it is crowded for space in its present quarters, plans have been drawn for a Maison d'optique, specially adapted to the needs of such an institute; it will contain ample lecture rooms and laboratories, and a library and archives, where students from all countries will be able to secure the information on theory and technic in the field of optics. As site for the new building, the city of Paris has donated an area of 2,700 square meters, at the corner of rue de Sèvres and boulevard Pasteur, and the national government has contributed a large subvention toward the cost of construction.

The optical institute comprises: (1) a technical school of optics, the purpose of which is to train engineers for optical industries; (2) services for the direct use of manufacturers; more particularly, the library and the laboratories; (3) a technical school for training skilled workmen employable, on leaving the school, in the manufacture of optical lenses and optical instruments of precision.

The library receives now most French and foreign periodicals devoted, either wholly or in part, to optics. With the approval of the syndicate that stands back of the manufacturers of optical instruments and instruments of precision, a monthly organ, the *Revue d'optique théorique et instrumentale*, was founded in 1921. The financial management of this review is entirely independent of outside control, but the institute supports it through the collaboration of its personnel and the services of the library. The optical institute benefits in that the journal is a medium for the publication of research and makes exchanges with various other publications, which serve to enrich the library.

The laboratories serve a threefold purpose: for the practical training of students; for research undertaken by the personnel of the institute, and for investigations or verifications required by manufacturers.

The Army Medical Department

As mentioned in a previous letter (THE JOURNAL, April 15, 1922, p. 1140), the army medical department is passing through a critical stage in its development. Many members of the army medical corps are being forced to resign or are being placed on the nonactive list. Their places are not being refilled. The number of applicants is constantly diminishing, as is shown by the accompanying table.

Recruiting in the Army Medical Corps

Years	Places Open to Competitive Examination	Number of Candidates Enrolled	Number of Candidates Accepted
1919	200	196	166
1920	200	225	158
1921	200	131	101
1922	150	149	88

In a report to parliament recently made by the Army Commission, M. Adrien Constans dwells on the disadvantages of this situation. The regimental service as it was organized before the war, with a physician in charge of each body of troops, has had to be abandoned. A garrison medicosurgical service has been substituted, which requires less personnel, several bodies of troops being assigned to one physician or surgeon. A military physician, no matter how devoted he may be to his duties, cannot be expected to attend to his services in a satisfactory and efficient manner if he is compelled to "scatter his energy" over several bodies of troops, which are sometimes garrisoned at long distances from one another. Overburdened by a multitude of duties, he is no longer able properly to perform any, and his work is inclined to become superficial where it ought to bear the character of continuity and thoroughness. Young military physicians who ought to serve at first in a subordinate capacity have perforce been placed in charge of important services for which they were inadequately prepared. In spite of their faithfulness and energy, they experience considerable difficulty, and at times their tasks prove insurmountable. The principal results of the new type of service are: an increase in the percentage of morbidity and a consequent undue number of sick leave furloughs; reduction in the number of effectives and delay in the instruction of the men; poor medical records and technical registers; hasty action by the exemption board; lack of supervision and care of the men on mobilization; almost complete absence of instruction of nurses and regimental litter bearers.

The draft of the law pertaining to the constitution of the staffs and the number of the effectives provides for the army medical corps a diminution of 121 in the average number of effectives (2,249 physicians, in place of 2,370).

Statistics on Welfare Work

M. Paul Strauss, minister of public health, charities and social welfare, has just addressed a circular letter to the prefects of the departments in regard to the progress being made by charity, welfare and public health societies. It

appears from this document that the number of hospitals and municipal shelters in France exceeds 1,860. There are, in addition, 82 public or private psychopathic hospitals and 12 municipal centers serving as public asylums, 22,000 bureaus of charity, 170 municipal bureaus of public health, 460 antituberculosis dispensaries, 57 public sanatoriums, 67 private sanatoriums, 61 preventoriums, 222 antivenereal consultation centers, 388 subsidized charitable organizations, 1,459 subsidized societies for the protection of mothers and infants (consultation centers for infant care, free milk stations, crèches, etc.), 150 housing bureaus, 627 societies for the betterment of housing conditions, and 27,756 friendly or mutual aid societies.

Prizes Awarded by the Academy of Sciences

Among the prizes and grants awarded by the Academy of Sciences, the Chaussier prize of 10,000 francs in medicine and surgery has been awarded to Dr. Justin Jolly, director of the histologic laboratory of the Ecole pratique des hautes études of the Collège de France, for his histologic researches, and to Dr. Maurice Nicolle, professor at the Pasteur Institute, for his researches in bacteriology; the Bréant prize of 5,000 francs has been given to Dr. Robert Sazerac, laboratory director, and to Dr. Constantin Levaditi, department head, of the Pasteur Institute, for their researches on the treatment of syphilis; the Barbier prize of 2,000 francs has gone to Dr. Fontoymont, director of the Ecole de medicine indigène of Tananarive (Madagascar).

Regulations for Crèches

In a previous letter I referred to an investigation of crèches and the desiderata that this inquiry brought to light (THE JOURNAL, Sept. 22, 1923, p. 1035). M. Paul Strauss, minister of public health and social welfare, has submitted to the president of the republic for approval and signature a decree designed to improve conditions in connection with the creation and functioning of public and private crèches. It is provided that crèches must not admit children who are ill, and that for children between 2 and 3 years old parents may have the choice of the crèche or the school for mothers (*école maternelle*), when both exist in the locality. A crèche closed on account of an epidemic may not be reopened until the prophylactic measures ordered by the prefect have been carried out. Among the new provisions may be mentioned the absolute prohibition of beds in certain places; the complete separation of the crèche from the consultation bureaus for infant care; the exaction of special sanitary guarantees, not only with respect to the salaried personnel of the crèche but also in regard to visitors who, for benevolent reasons, come to show their interest in the cause or to take a practical course in puericulture. When anywise feasible, the cradle rooms should be separate and distinct from the rest of the crèche; if possible, with an arrangement allowing the surveillance of the infants through a glass partition. Children able to walk should be separated from others. Absolutely free care may be accorded only when the mother's complete dependence can be shown. The mother shall not be regarded, by reason of the modest sum that she pays, as a mere assistant but rather as a partner in the care and attention that her child receives.

Death of Prof. Edouard Meyer

Dr. Meyer, professor of physiology and dean of the medical faculty of the University of Nancy, has died at the age of 63. Meyer was born at Lauterbourg (Bas-Rhin), April 6, 1860. He graduated in medicine at the University of Lille in 1886. He became agrégé professor in 1889, but left Lille in 1891 to take a position as instructor in physiology in the University of Toulouse. Three years later he became professor of physiology in the University of Nancy. In 1913 he succeeded Professor Gross as dean of the medical faculty, which office he held up to a short time before his death.

BUCHAREST

(From Our Regular Correspondent)

Nov. 10, 1923.

Medical Conditions in Southern Bosnia

Sanitation in the northern part of Bosnia leaves nothing to be desired even by a western man. But conditions are different in the southern part of the province. Here, and particularly in the vicinity of the southern boundary, where the population is mainly Turkish, health conditions are far behind those in the northern districts. The people here have no confidence in doctors; they prefer to be attended by the "hodzsas" (a kind of "medicine men"), who do not need to see patients daily, and usually see them only once, after which the patients either die or recover. The Turkish hodzsa needs no suggestive apparatus for the practice of his calling, as those who ask his aid are under the influence of omens and auguries, and are dominated by the mysticism that veils the person of the hodzsa, the prophet of Allah. None but a Mohammedan may consult him; the patient is bound to the strictest secrecy. He is told that the hodzsa is the representative of Allah, and can put curses on his enemies as well as blessings on those who obey.

VISIT TO A MEDICINE MAN

At Plevlje there are many foreigners traveling to Constantinople; here the secrecy of the hodzsa breaks down before the temptation of gold, and foreigners occasionally enter. The hodzsa showed his consulting rooms, the most striking feature of which was his seat. This was a comfortable lean-to foot-stool, surrounded by the finest Turkish and Persian rugs, on which he sits with crossed legs. In front of him is the Koran, which is the storehouse of his science and knowledge. Around him are jars, filled with various herbs, plants and also animals; frogs, cats and dogs are important occupants of the hodzsa's drug store.

A Turkish woman came with a baby, aged 2, whose face was shrunken and wrinkled, like that of a person of 60, owing to the administration of opium by the mother to soothe the child whenever it cried. The mother stated that the child must be bewitched; for two weeks it had had fits of suffocation, with coughing and restlessness. The gray headed hodzsa consulted the Koran, and for a while studied in silence. Then he bade the woman call again on the morrow, bringing with the child an oka (a Turkish measure of weight) of flour, and a female cat, aged 7 weeks. In the meantime she should think continually on Allah. On the morrow woman and child came. Before the foot-stool of the hodzsa was set a great rug, on which were laid, on the right side, the flour in a brass jar, and on the left side the kitten in a cradle-like cage, looking like a tiger cub. Between the two was placed the child. Again the Koran was consulted; the hodzsa then took some herbs from a jar out of the cupboard and, taking the flour, kneaded a cake with a dexterity that might put to shame even the most skilled of French cooks. After making some signs over the child's head, he gave the cake to the cat, which devoured it with great relish. The hodzsa then took the cat out of the cage, whereon it soon began to moan, jumped hither and thither, shook itself to the right, then to the left, suddenly collapsed, and was dead. Then the hodzsa lifted up the baby from the rug, and declared that the cure was finished. The mother shouted for joy, for the cure had succeeded; the illness of her baby had wandered into the cat and killed it. The hodzsa then stated that the child must recover within a few weeks.

After the departure of the woman an old man came in, whose face spoke of suffering. The hodzsa gave him a leaf from his treasury of knowledge, the Koran, to swallow in water. The swallowing of pages from the holy book is frequently practiced here. People do it even without "medical" advice.

SPECIFIC THERAPY

It may be of interest to mention certain popular customs in regard to the treatment of particular diseases. Those, who suffer from malaria must catch a croaking frog at full moon, cut it in two, and bind the anterior half around the nape of the neck; then all will be well. Cripples and deformed children must be manipulated as follows: The patient is taken at break of day to a crossroads. The first man who passes is asked to give the child a new name; the second man who comes along baptizes it with a certain ceremony. To refuse this service is considered a great sin, and to comply is a good deed to Allah. It is believed that children who receive a second name in this way become well shaped; bent spines will straighten, and lame limbs will become corrected. Whoever carries on his person the tooth of a wolf is immune from contagious disease. Somewhat more rational is the custom of persons afflicted with some sorrow, or troubled with a bad temper, of taking castor oil. This, they believe, will make them joyful again.

On the coasts of Dalmatia, where there are as many Christians as Mohammedans, Christian beliefs have been mingled with the ancient customs in the art of healing. For example, in Ragusa and Metkovitz, on the shore of the Adriatic, it is customary, in order to protect oneself against evil spirits and witches, to await the full of the moon (this being the Turkish Hygeia), and then go in the direction of the moon until an image of the Maria Immaculata is seen. Around this one must pick up a few shellfish which abound here, take out the contents, pulverize the dry shell in a mortar, mix the powder with flour, water, salt, and red and black pepper, and then make it into a cake. By eating this cake, one acquires protection from the machinations of even the most evil minded witches.

For injuries, stabs and shot wounds, nothing excels this remedy: A sleeping dormouse is sought and, while in its deepest sleep, is stabbed to death by a single blow. The dormouse must be killed with a single blow or another dormouse must be found. Then the fat is taken out and smeared on the bleeding wound or aching part. The treatment of discharge from the ears is even more curious. Young mice are caught and cooked in table oil; they are then placed in a wooden jar on which is engraved a certain verse of the Koran. The jar is hung up in the middle of the ceiling. Earaches of minor severity may be healed in this way; but severer affections are to be cured by dropping into the ear a few drops of oil, made by melting the fat from the breast of a male rabbit; recovery is certain if this procedure is adopted after the usual evening ablutions and prayer.

FOR BELIEVERS ONLY

To deter foreigners from calling on the hodzsas for help, it is taught that remedies are effective only when adopted by true believers.

BERLIN

(From Our Regular Correspondent)

Nov. 17, 1923.

Physicians and the New Social Insurance Legislation

As was to be expected, the recent modifications in the federal social insurance law, especially that portion which deals with health insurance, which was discussed in my letter last week, have caused great excitement among physicians. Sharp protests are being published on all sides. The executive committee of the Leipzig League has issued the following manifesto: "The federal ministry of labor has promulgated several decrees which effect radical changes in health insurance legislation. Since September 1 of this year, health insurance has been badly disrupted owing to the widespread economic collapse. The benefits accorded the insured have become more and more restricted, although the capitation fees have mounted to previously unheard-of sums. The extra benefits are being abolished by many health insurance societies. Health insurance for families has been done away with. Patients must pay either wholly or in part for medicines and other therapeutic agents. Many societies demand of the insured additional payments to meet the cost of medical treatment. The largest league of health insurance societies (der Verband deutscher Ortskrankenkassen) has announced in the press that the panel physicians can no longer count on being paid for their services, and that patients, in lieu of medical treatment, are to receive cash payments from the societies. Health insurance, during recent months, has been kept up to a certain extent by the panel physicians, who have given their services almost gratuitously. Often they are paid according to the index established by the federal bureau for the previous week, instead of according to the index for the week in which the services were rendered as is the case with workingmen, employees and officials. Consequently, even the physicians whose services are most in demand receive fees reckoned in greatly depreciated currency. In recent weeks, owing to the soaring of the American dollar, a consultation fee has been the equivalent of only from 1 to 2 gold pfennigs, or less than half a cent in American money. Recent legislation introduced by the ministry of labor encroaches on the freedom of the medical profession. Physicians are therefore frequently compelled to refuse to give treatment. The executive committees of the health insurance societies can dictate to the physicians what therapeutic agents and methods of treatment they shall employ; on what basis and how long the insured are to be retained on the sick list, and whether or not and, if at all, for how long they are to be treated in a hospital. If the physicians do not conduct themselves in accordance with the demands of the health insurance societies, they can be dismissed without notice, the societies having virtually the right to declare the contracts entered into between the physicians and the societies null and void. The decision as to what physicians shall be admitted to the panel has been put into the hands of the health insurance societies. The health insurance societies may introduce the system of district physicians, establishing districts in which the insured are deprived of the choice of physician. Moreover, the societies may, on their own initiative, abolish free medical treatment, giving the patients cash payments in lieu of sick benefits. As a result of this provision, the societies have the right to relieve themselves of their legal obligations to the insured by the payment of pitiful sums, and those physicians who, in the interest of their patients, insist on using the most effective medicines and methods of treatment may be dismissed without notice. If these new decrees remain in force, in the future only such physicians will be able to serve the insured as enjoy the confidence and good will of the executive committees of the health insurance societies, but not the confidence of the insured. The medical profession holds that the privileges that are left to the insured are not of a nature to preserve the health of the people, and declares that it can no longer be responsible for a system that offers the insured so few advantages, and that it must refuse to make further sacrifices in money and the right of self-determination. What is more, the physicians are no longer in a position to make further sacrifices as, in spite of their unselfish devotion to their duties, they have been brought to financial ruin by the incompetence of the health insurance societies."

Epidemic of Infantile Paralysis

The end of August, an epidemic of infantile paralysis appeared in the district of Breslau. Last year, an epidemic was announced in Wurttemberg. Later, an outbreak occurred in the North, in the district of Cassel. Thuringia was next to suffer; afterward, Westphalia and the Rhine Province were visited, and now the infection has traveled in a northeasterly

direction to Silesia. The government has demanded the enforcement, for the space of three months, of notification, isolation and supervision of cases.

Welfare Work Among Refugees from the Ruhr Region

The ejection of the families of officials and others from the Ruhr Region and the Rhine Province has made it necessary to organize welfare work on a large scale, especially in aid of the children affected. The children among the refugees not only have been given shelter and food in the unoccupied regions of Germany, but also were welcomed in the adjacent foreign territory. Some of the children were quartered in the rural sections in families; others in children's homes and in health centers. In some instances, large colonies of children have been furnished temporary quarters on former military drill grounds. They are constantly under medical supervision, and are fed as well as circumstances permit. The length of the stay in the country or in the children's homes is at least six weeks, and, when possible, from three to four months. Up to September, 270,000 children from refugees' families had been cared for in the country, and 48,000 in children's homes. The families in the country usually take care of the children free of charge, and they often provide them with clothing as well. The sojourn in children's homes costs the authorities, however, large sums. The results of this welfare work have been, in general, satisfactory. However, it remains to be seen what the final results will be. According to examinations made of 530 children, who, during the year 1922, were quartered in health centers in Mannheim, 78 per cent. of the boys and 98 per cent. of the girls showed improvement.

Tendoplasty

At the last session of the Berliner Medizinische Gesellschaft, Professor Katzenstein, director of the surgical department of the Friedrichshain Hospital, presented patients who showed excellent results from connecting paralyzed with healthy muscles. A child whose right leg was completely paralyzed became able to walk after Katzenstein had united the paralyzed muscles with the abdominal musculature. Power is brought to the paralyzed muscles through the formation of artificial tendons from human tissue. For these tendons he uses not only muscles but also strips of skin. Good success was secured in the case of patients with muscles paralyzed by gunshot wounds, and in children with infantile paralysis. The technic of the operative procedure and the results were demonstrated by films.

Marriages

WILLIAM L. VICKERS, Lake Arrowhead, Calif., to Miss Minnetta Chandler of Long Beach, November 6.

JOHN MASON HUNDLEY, JR., Baltimore, to Miss Emily Louise Holt of North Carolina, December 1.

BRUNO A. LUNGMUS, Milwaukee, to Miss Martha Lucille Snyder of Oconomowoc, November 22.

JOHN EDWARD MANNION, Kimball, S. D., to Miss Frances E. O'Neil of Detroit, in November.

BENJAMIN L. NORDEN to Miss Mary F. Warren, both of Portland, Ore., November 17.

GATEWOOD to Miss Esther Lydia Harper, both of Chicago, at Los Angeles, November 28.

WALFRED JOHNSON, Stillwater, Minn., to Miss Sophie Koelzer of Jordan, October 1.

JAMES RUSSELL DRIVER to Miss Julia Ingram Davies, both of Cleveland, December 1.

HERBERT WILLIAM SALTER to Miss Charlotte Benjamin, both of Cleveland, October 27.

LEWIS T. BAXTER to Miss Esther Bauchet, both of Chicago, November 9.

Deaths

Walter Fritz Winholt ⊕ Chicago; Rush Medical College, Chicago, 1913; member of the Chicago Pediatric Society; assistant professor of medicine and pediatrics at his alma mater; medical director of the Chicago Infant Welfare Society; served in the M. C., U. S. Army, during the World War; on the staffs of the Cook County Hospital and the Presbyterian Hospital, where he died, December 9, of chronic nephritis and heart disease, aged 35.

James Cheston Morris, West Chester, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1854; examiner and lecturer at his alma mater, 1855-1863; at one time curator of the American Philosphy Society; director of the biologic and microscopic department of the Philadelphia Academy of Natural Sciences; Civil War veteran; aged 92; died, November 29, of heart disease.

Arthur Nichols Curtis, St. Louis; Medical Department of Columbia College, New York, 1888; formerly professor of obstetrics at the St. Louis University School of Medicine and the Washington University Medical School; for ten years on the staff of St. Ann's Maternity Hospital; aged 57; died, November 22, following a long illness.

Edwin James Kennedy, Tiskilwa, Ill.; Ohio State University College of Medicine, Columbus, 1908; served in the M. C., U. S. Army, in France, during the World War; aged 48; died, November 19, at the Presbyterian Hospital, Chicago, following an operation for carcinoma of the rectum.

David Samuel Hachen, Cincinnati; University of Cincinnati College of Medicine, 1920; instructor of medicine at his alma mater; on the staff of the Cincinnati General Hospital, where he died, November 23; aged 27, of encephalitis, subsequent to an attack of streptococcus sore throat.

Wallace Winfield Potter, Seattle; Bellevue Hospital Medical College, New York, 1871; Medical School of Maine, Portland, 1871; formerly health officer of Spokane, Wash.; aged 74; died, November 17, at a local hospital, of a skull fracture, received when struck by an automobile.

James Floyd Bowman ⊕ Irvington, N. J.; Columbia University College of Physicians and Surgeons, New York, 1904; on the staff of the New York Eye and Ear Infirmary; aged 44; jumped to his death from the ninth floor of the Municipal Building, New York City, November 28.

Jewell Arthur Newman ⊕ Colorado Springs, Colo.; Medical Department of the Tulane University of Louisiana, New Orleans, 1911; formerly on the staff of the Cragmor Sanatorium; aged 37; died, November 19, at Los Angeles, of pulmonary tuberculosis.

Robert Wynne Horton ⊕ Captain, M. C., U. S. Army, Fairfield, Ohio; University of Texas Department of Medicine, Galveston, 1899; served during the World War; aged 45; died, November 15, at Wilbur Wright Field, Dayton, Ohio.

Stephen W. Stafford, New Orleans; Medical Department of the Tulane University of Louisiana, New Orleans, 1899; formerly on the staff and superintendent of the Charity Hospital; aged 50; died, December 3, of cerebral hemorrhage.

William Moody Parsons, Manchester, N. H.; Vermont Medical College, Woodstock, 1852; member of the New Hampshire Medical Society; formerly member of the board of health; aged 97; died, November 19, of pneumonia.

Elza Wyatt Burris, Indianapolis; Medical College of Indiana, Indianapolis, 1903; member of the Indiana State Medical Association; for many years president of the Citizens' State Bank; aged 48; died suddenly, November 20.

John S. Beers, St. Joseph, Mich.; Chicago (Ill.) Medical College, 1878; past president of the Berrien County Medical Society; formerly state senator and member of the city council; aged 77; died, November 18, of paralysis.

Charles Joseph Gross, Montreal, Que., Canada; Montreal School of Medicine and Surgery, 1907; served during the World War, in France, with the Canadian Army Medical Corps; aged 42; died recently, of heart disease.

James Lewis Miller, Jr., Sierra Madre, Calif.; Ensworth Medical College, St. Joseph, Mo., 1908; served in the M. C., U. S. Army, during the World War, with the rank of captain; aged 36; died, November 12, of tuberculosis.

Charles Wesley Astrop, Surry, Va.; Medical College of Virginia, Richmond, 1884; member of the Medical Society of Virginia; aged 65; died, November 20, at the Tucker Sanatorium, Richmond, following a long illness.

Edward Francis Brennan ✠ New York; New York University Medical College, 1896; on the staff of the Bronx Eye and Ear Infirmary; aged 56; died suddenly, November 29, at Larchmont, of cerebral hemorrhage.

Edgar Douglas, Halifax, N. S., Canada; McGill University Faculty of Medicine, Montreal, Que., 1904; served during the World War, in France, with the Canadian Army Medical Corps; aged 45; died, October 7.

James W. Campbell, Kingston, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1891; formerly professor of medicine and therapy at his alma mater; aged 57; died, October 11, of septicemia.

Frank A. Warren, Tekonsha, Mich.; Detroit Homeopathic Medical College, 1875; aged 72; died, November 17, at the Wade Memorial Hospital, Coldwater, of injuries received when struck by an automobile.

Arthur William Calloway ✠ Asheville, N. C.; Chicago (Ill.) Homeopathic Medical College, 1895; aged 51; was found dead, December 5, with a bullet wound in the chest, presumably self-inflicted.

Samuel Carson McCormick, Duluth, Minn.; Jefferson Medical College of Philadelphia, 1862; Civil War veteran; at one time health officer and county physician; aged 86; died, November 17, of senility.

Albert Louis Ream ✠ Chicago; Chicago Medical School, 1915; served in the M. C., U. S. Army, during the World War; aged 48; died, December 9, at the Wesley Memorial Hospital, of uremia.

Henry Herr, Washington, Ind.; Miami Medical College, Cincinnati, 1894; member of the Indiana State Medical Association and the city board of health; aged 58; died, November 20, of heart disease.

Joseph Ennalls Muse, Baltimore; Baltimore Medical College, 1898; member of the Medical and Chirurgical Faculty of Maryland; for six years member of the city council; aged 61; died, November 16.

Harrison Burgess Savage, Joplin, Mo.; Bellevue Hospital Medical College, New York, 1886; member of the Kansas Medical Society; aged 60; died, November 15, following a long illness.

David Richardson Beaver, Conshohocken, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1864; Civil War veteran; aged 81; died, November 17, of bronchopneumonia.

I. Willard Rayburn, San Diego, Calif.; Long Island College Hospital, Brooklyn, 1877; Civil War veteran; formerly a practitioner in Indiana; aged 77; died, November 19, of paralysis.

Eleanore M. Hiestand Moore, Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1890; formerly demonstrator of chemistry at her alma mater; died, November 29.

Samuel G. Edwards, Los Angeles; Medical College of Ohio, Cincinnati, 1893; member of the California Medical Association; aged 55; died, November 11, following a long illness.

Leroy Stahl Kennedy, Hot Springs National Park, Ark.; Louisville (Ky.) Medical College, 1905; aged 49; died, October 21, at Mount Ida, of carcinoma of the stomach.

Leonard Edwin Gallup, Marshall, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1879; aged 72; died, November 11, of paralysis.

William C. McReynolds, Wyaconda, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1871; aged 75; died, October 30, following a long illness.

James Harvey Bogle, Sebring, Fla.; College of Physicians and Surgeons, Baltimore, 1893; formerly a practitioner in Virginia; aged 55 died, November 10.

Walter Tate Willis, Williston, S. D.; University of Maryland School of Medicine, Baltimore, 1889; aged 63; died, October 14, following a long illness.

Charles Albert J. Lignot, Jersey City, N. J.; Medical Department of the University of the City of New York, 1876; aged 73; died, October 2.

Malachi A. Carriker, Nebraska City, Neb.; Eclectic Medical Institute, Cincinnati, 1885; aged 75; died, November 7, at Kansas City.

Frank H. Knickerbocker ✠ Staples, Minn.; Detroit (Mich.) Medical College, 1879; aged 66; died in November.

Hugh Hanna, Donegal, Pa. (years of practice); aged 85; died, October 21, of senility.

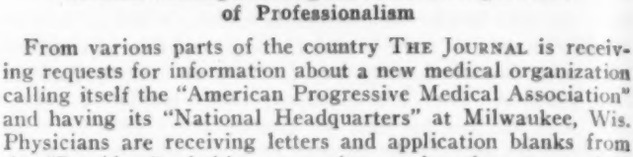
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

THE AMERICAN PROGRESSIVE MEDICAL ASSOCIATION

Another Attempt to Organize the Twilight Zone of Professionalism

From various parts of the country THE JOURNAL is receiving requests for information about a new medical organization calling itself the "American Progressive Medical Association" and having its "National Headquarters" at Milwaukee, Wis. Physicians are receiving letters and application blanks from the "President" of this new society urging them to send in their application for membership and the annual membership fee of $5.00. According to the letterhead of the American Progressive Medical Association, which, by the way, is said to be incorporated, this organization is "Impartial—Fearless—Progressive—Democr?ic." It has a President, three Vice-Presidents, a Recording Secretary, Corresponding Secretary, a Treasurer and a General Counsel—to say nothing of an Editor and General Manager of its medical journal, the latter,


IMPARTIAL—FEARLESS—PROGRESSIVE—DEMOCRATIC

AMERICAN PROGRESSIVE MEDICAL ASSOCIATION

INCORPORATED

OFFICERS

NATIONAL HEADQUARTERS
318 WEST WATER ST
MILWAUKEE, WIS.

November 10, 1923.

BOARD OF COUNCILS &c.

Letterhead of the "American Progressive Medical Association."

apparently, not yet born. It has a "Council on Health and Public Instruction," a "Council on Medical Education and Hospitals," a "Council on Scientific Research," a "Council on Pharmacy and Chemistry," a "Council on Medical Legislation," 'n ever'thing!

Applicants for membership must "agree and stipulate" that they will give their "moral support to Progressive Therapeutics." Furthermore, they "agree to stand firm for National Reciprocity for all Licensed Physicians without examination or any RED TAPE."

When physicians ask THE JOURNAL, as some have, to inform them as to the "standing of the American Progressive Medical Association," they are asking for the impossible because the Association has not yet been in existence a month. The best THE JOURNAL can do is to publish what material it has regarding the founders and officers of this new organization. From this material any physician should be able to determine whether or not he wishes to be associated with an organization so fathered. Here it is:

THE PERSONNEL

THEODORE HUBERT LARSON, M.D., Milwaukee, Wis., *President, Editor* and *General Manager:* According to our records, this man was born in 1871 and claimed a diploma, dated 1901 from the National Medical University of Chicago, a "sundown" institution now extinct. We have been unable to verify this claim. It was nothing to be proud of, in any case. In 1912 Larson received a diploma from Bennett Medical College, Chicago. He was licensed in Oklahoma in 1902 and in Wisconsin in 1911. Larson seems to have been in a good many places before settling down in Milwaukee: Oklahoma City, Cushing and Tulsa in Oklahoma; Fort Dodge, Iowa; Chicago, Illinois, and Edgerton, Waupaca, Weyauwega and Oshkosh in Wisconsin. We have in our files some clippings from the Sioux City, Iowa, papers of about twelve years ago recording the arrest of T. H. Larson on a warrant

charging him with practicing medicine without a license. According to one of the clippings:

"Dr. Larson . . . admitted that he had no license to practice here, and said he came here for the sole purpose of manufacturing medicine. One of his remedies was said to have been a blood purifier."

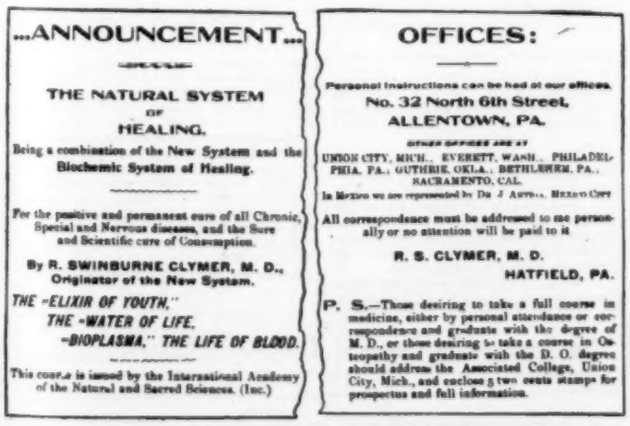
Later clippings show that this charge was dismissed and he was rearrested on the charge of being a fugitive from justice. We have no record of the outcome of this case.

Newspapers published last June reporting the convention of the National Eclectic Association stated that that organization was "seething with dissension" over a "clinic gland transplantation performed earlier in the day by Dr. T. H. Larson of Milwaukee." According to the reports Larson was scheduled to read a paper on gland transplantation and illustrated it with an actual operation. "The patient was a woman thirty-three years old and the glands used in the transplantation were taken from a goat." Larson claims to limit his practice to abdominal surgery.

SIMON LOUIS KATZOFF, M.D., Bridgeport, Conn., *First Vice-President* and *Chairman of the Council on Health and Public Instruction:* According to our records, Katzoff was born in 1890 and was granted a diploma in 1912 by the Georgia College of Eclectic Medicine and Surgery of Atlanta. He was licensed by the Eclectic Board of Georgia in 1912 and by the Eclectic Board of Connecticut in 1916.

We have in our files an article that appeared in the October, 1911, issue of an advertising sheet, the *American Journal of Mechano-Therapy*, a house-organ for a correspondence concern, the American College of Mechano-Therapy, exposed in THE JOURNAL, Aug. 28, 1909. The article was on "Constipation" and is headed: "By Dr. Simon L. Katzoff." Katzoff had not graduated at the time this appeared. The article itself is not worth discussing.

We also have in our files a clipping from the Bridgeport (Conn.) *Times* of Nov. 15, 1919. The clipping is of an article entitled "What is Vivisection?" and alleged to be written "By Simon Louis Katzoff, A.M., M.D., Author of 'Timely Truths on Human Health.'" The article is of the antivivisection type and contains the usual number of misstatements to the running inch. Katzoff has also written a book "Timely Truths on Human Health." It is published by the Cooperative Publishing Company, Inc., Bridgeport, Conn.


...ANNOUNCEMENT...

THE NATURAL SYSTEM OF HEALING.

Being a combination of the New System and the Biochemic System of Healing.

For the positive and permanent cure of all Chronic, Special and Nervous diseases, and the Sure and Scientific cure of Consumption.

By R. SWINBURNE CLYMER, M. D., Originator of the New System.

THE "ELIXIR OF YOUTH," THE "WATER OF LIFE," "BIOPLASMA," THE LIFE OF BLOOD.

This course is issued by the International Academy of the Natural and Sacred Sciences. (Inc.)

OFFICES:

Personal instructions can be had at our offices.

No. 32 North 6th Street, ALLENTOWN, PA.

OTHER OFFICES ARE AT

UNION CITY, MICH., EVERETT, WASH., PHILADELPHIA, PA., GUTHRIE, OKLA., BETHLEHEM, PA., SACRAMENTO, CAL.

In Mexico we are represented by DR. J. ARTEAGA, MEXICO CITY

All correspondence must be addressed to me personally or no attention will be paid to it

R. S. CLYMER, M. D.
HATFIELD, PA.

P. S.—Those desiring to take a full course in medicine, either by personal attendance or correspondence and graduate with the degree of M. D., or those desiring to take a course in Osteopathy and graduate with the D. O. degree should address the Associated College, Union City, Mich., and enclose 5 two cents stamps for prospectus and full information.

R. Swinburne Clymer is "Second Vice-President" of the "American Progressive Medical Association." Our records fail to show that he was ever graduated by a reputable medical college. Clymer's activities have been many and various. Here is reproduced (in miniature) the covers of a booklet used by Clymer in exploiting two of his schemes: "The Natural System of Healing" and the "Associated College," which granted the degree of "M.D." on the mail-order plan.

R. SWINBURNE CLYMER, M.D., Quakertown, Pa., *Second Vice-President:* Our records fail to show that this man was ever regularly graduated by any reputable medical college. In a paid notice that appeared in Polk's Medical Directory for 1906, Clymer claims the degrees of "Ph.G." and "M.D." He is classified as a "Physio-Medicist" and a graduate of the "Independent Medical College," Chicago, 1898. The Independent Medical College was a diploma mill which sold diplomas to any one who sent the cash. It was finally declared a fraud by the federal authorities and put out of business. In Polk's directory for 1908 Clymer is listed as an "Electro-Therapeutic Specialist." In the same directory for 1912 he is given as a graduate of the College of Medicine and Surgery, Chicago, 1911. Correspondence with a one-time officer of this extinct school brought the statement that in 1911 Clymer "was granted an *ad eundem* diploma"!

In 1903, Clymer was "Secretary and Manager" of the "Twentieth Century Physio-Medical College" a diploma mill whose "Main Office" was a post-office box in Guthrie, Okla., and whose "Corresponding Department" was a post-office box at Union City, Mich. Letters written to Clymer at Union City, Mich., were answered by him on stationery bearing the same address but mailed from Hatfield, Pa. Through the efforts of THE JOURNAL (see issue of Oct. 1, 1904, p. 990) the post-office department attempted to get a case on this fraud

"BY THEIR FRUITS YE SHALL KNOW THEM"

Twentieth Century Physio-Medical College

Incorporated Under State Law

Main Office, Lock Box 249, Guthrie, Okla.

Correspondence Department, Lock Box 161, Union City, Mich.

The "Twentieth Century Physio-Medical College" was another scheme of R. Swinburne Clymer's. It was a dip'oma mill which did business from a post-office box in Guthrie, Okla., and a post-office box in Union City, Mich. Clymer, meanwhile, lived in Hatfield, Pa.

but Clymer discovered that the thing was being investigated and dropped that line of endeavor. However, the charter of the "college" was cancelled by the state of Oklahoma in 1904. The name of Henry J. Barton, of whom more later, appeared on the stationery of the "college" as one of its attorneys.

In 1904, R. Swinburne Clymer conducted from Hatfield, Pa., and Union City, Mich., "The International Academy of the Natural and Sacred Sciences" and at the same time exploited the "Elixir of Youth," the "Water of Life" and "Bioplasma." The "International Academy of the Natural and Sacred Sciences" offered a "course" in the "Natural System of Healing" which proposed to enable those taking the courses to "treat every known disease." Instruction was given on the mail-order plan and the degrees of "M.D." and "D.O." were granted. At the same time Clymer had offices at Allentown, Pa. Those who wanted to take the "course" were told to "address the Associated College, Union City, Mich.," and obtain a "prospectus and full information."

In this connection, it is of interest to refer to a fraud order that was issued by the United States postal authorities against "The Philosophers of the Living Fire" with which R. S. Clymer was connected. It was operated from Union City, Mich., the "home" of Clymer's "Associated College." The scheme consisted in obtaining money for membership in this alleged society for "degrees" in the "society." The government investigated and found that the degrees were "simply devices for obtaining additional sums of money from credulous persons." The "Philosophers of the Living Fire" was supposed to be a quasi-religious, secret order with signs, grips, obligations, passwords and similar paraphernalia. Henry J. Barton, already referred to in connection with the "Twentieth Century Physio-Medical College," was head of the concern and was known as the "Reverend Supreme Grand Rabboni." In October, 1905, the Philosophers of the Living Fire were extinguished by the fraud order which covered not only Barton but "Dr. R. S. Clymer." The fraud flared up again in 1917 and was again extinguished by a second fraud order which again covered the name of "Dr. R. S. Clymer."

A testimonial credited to R. S. Clymer from Souderton, Pa., appears in the advertising matter issued by the "Institute of Physicians and Surgeons" of Rochester, N. Y. It is to the effect that he has received the diploma from this "institute" and "It is in every respect equal to my medical or hospital diplomas." It doubtless was. The "Institute of Physicians and Surgeons" was a mail-order swindle that was put out of business by the federal authorities July 21, 1905. (See "Nostrums and Quackery," Vol. I, page 407.)

In 1910, R. Swinburne Clymer was exploiting the "International System of Magnetic (Alchemic) Therapeutics."

Advertisements were published stating that R. S. Clymer had obtained a patent from Washington for an apparatus for the magnetic treatment of diseases and that a company was "being formed by Dr. Clymer and some others interested." This venture was an outgrowth of an earlier scheme known as the "International System of Direct Medication."

Some of the later activities of Clymer concern another organization, the "Rosicrucian Aid" conducted from "Beverly Hall," Quakertown, Pa. One of the numerous activities of this organization was that of issuing a book on dietetics which is credited to "R. Swinburne Clymer, College of Medicine and Surgery, 1902." It will be remembered that Clymer has claimed graduation in the medical directories from the College of Medicine and Surgery, 1911. We have in our records still other information regarding Clymer of a more personal character, which need not be gone into at this time.

Reproduction, greatly reduced, of a typical advertisement of George Starr White, "Third Vice-President" and chairman of the "Council on Medical Education and Hospitals" of the "American Progressive Medical Association." White claims in this advertisement to have had "40 years of successful practice." Actually he graduated in medicine in 1908 when he was 42 years old. White also sells a "patent medicine."

GEORGE STARR WHITE, M.D., Los Angeles, Cal., *Third Vice-President* and *Chairman of the Council on Medical Education and Hospitals:* According to our records, George Starr White was born in 1866 and obtained a diploma from the New York Homeopathic Medical College and Hospital in 1908 when he was forty-two years old. Ever since his advent in the medical field White seems to have been interested in various medical fads and fakes. For a while it was "Spondylotherapy" then "Zonetherapy" and still later a new brand of diagnosis "Bio-Dynamo-Chromatic Diagnosis." In 1915 he advertised that he was giving "courses" in Spondylotherapy in various cities and in the advertisement emphasized that he was a member of the American Medical Association. He is no longer a member as he was expelled from membership in the Los Angeles County Medical Association in February, 1916.

In May, 1915, White was arrested in Chicago and fined $100 and costs for violation of the Medical Practice Act. During the influenza epidemic in 1918 White put out a "patent medicine" "Valens Essential Oil Tablets" which were said to be for "Gripping the Flu out of Influenza" and were also claimed to benefit or cure incipient tuberculosis, hayfever, and some other things.

White tacks the letters "F.S.Sc., Lond." after his name. They mean "Fellow of the Incorporated Society of Science, Letters and Arts of London, Ltd." This is a serio-comic fake; the fellowships cost one guinea ($5.00). Not a few "patent medicine" exploiters in the United States are "Fellows." George Starr White was an active official in another "twilight zone" society, the "Allied Medical Associations of America." White was also the State Vice-President of California of the "American Medical Liberty League," an organization of "patent medicine" quacks and faddists, devoted to the task of blackguarding scientific medicine in general and the American Medical Association in particular. White in his writings, and they are as voluminous as they are unscientific, affects phonetic spelling. In writing to THE JOURNAL about a year ago chiding it for dubbing him a disciple of Abrams, he said, more in sorrow than in anger: "I feel that yu ar honest in your statement tho, so I hav no hard feelings."

JONATHAN M. LARSON, M.D., Chicago, Ill., *Recording Secretary:* According to our records, Larson was born in 1873 and in 1905 received a diploma from the National Medical University of Chicago. This "university" was a low-grade school of the "sundown" variety. It is now out of existence and for some time before it went out of existence was not recognized either by the Board of Health of the state in which it operated or by the boards of the majority of the other states in the Union. L. D. Rogers, the exploiter of "Lazy Serum," the "Japanese Treatment for Tuberculosis," "Auto-Hemic Serum," etc., was the head and chief owner of the National Medical University. J. M. Larson is a disciple of the Abrams cult. He advertises in local publications that he has "secured an Abrams Oscilloclast and introduced it" into his practice. He warns the public against those who are not using the simon-pure, one hundred per cent. "Electronic Reactions of Abrams," but some imitation thereof.

ORIN WM. JOSLIN, M.D., New York City, *Corresponding Secretary:* According to our records, Joslin was born in 1875 and received a diploma in 1903 from the Milwaukee Medical College. Joslin seems to be a "joiner." His name appears on the program of the "American Association for Medico-Physico Research." He is credited with being a member of the "Pioneer Spectro-Chrome Therapeutic Class," and of the "Executive Board of the American Association for the Study of Spondylotherapy." Also his name appears as indorsing the outrageous fake "Auto-Hemic Therapy" of L. D. Rogers.

Remodeled, newly furnished and equipped thruout, and really reopened for regular hospital business only two weeks ago, now practically full—WHY?

BECAUSE

We are now able to *diagnose* almost every known disease from its very beginning—and then—CURE IT.

Just recently we cured two of the worst cases of BRIGHTS DISEASE that could exist, and did it in two weeks. There is now practically no disease that stops us, or that we cannot stop.

We have the most wonderful treatment ever discovered for ECZEMA and ALL OTHER SKIN DISEASES. BIRTH-MARKS quickly cured by a new method that is entirely painless. HAYFEVER and ASTHMA as well. We realize that these statements sound strong, but we believe that no one would credit us with being so short sighted as to pay for a full page in this valuable paper just to represent ourselves as doing anything that we cannot do. If you doubt us, talk with our patients cured, or try us out. If you don't doubt us, again we say try us out.

Write for our New Free Illustrated Booklet.

The Dodgeville General Hospital ORIN W. JOSLIN, M. D. Pres. and Medical Director

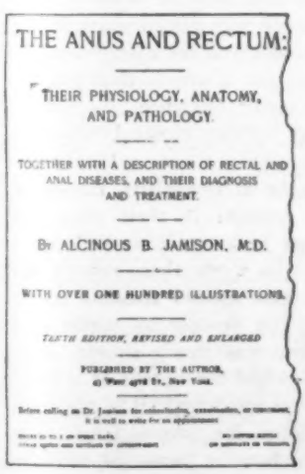
The Dodgeville General Hospital was the creation of Orin W. Joslin, the "Corresponding Secretary" of the "American Progressive Medical Association." Joslin is an advocate of various methods of treatment and diagnosis: "Auto Hemic Therapy," "Spectro-Chrome Therapy," "Bio-Dynamo-Chromatic Diagnosis," "Electronic Reactions of Abrams," etc.

Joslin practiced for some time in Wisconsin. From 1904 until 1912 he was in Milwaukee; in 1914 at Linden and in 1917 at Dodgeville. While at Dodgeville, Wis., he conducted an institution known as the "Dodgeville General Hospital" (situated over a dry-goods store) and carried on an extensive advertising campaign in the local papers. One of these advertisements, a full page affair, contained among other things, a testimonial purporting to be from a physician and puffing the Bio-Dynamo-Chromatic fake. It was repudiated by the physician in question and Joslin has practically admitted that it was fabricated.

Joslin was also "President, Medical Director and Founder" of the "Pine Grove Sanatorium" at Dodgeville, Wis. This was "for the exclusive treatment of Cancer and Tuberculosis." According to Joslin: "Our treatments for Cancer and Tuberculosis are all very pleasant to take." It seems that "the main part" of the "treatment" was the "inhalation of Condensed Mountain Air . . . Tropical Sunlight . . Alpine Sun Light . . . and the Intermittent Chromatic Radiant Ray as given to the world by Dr. George Starr White, the Wizard Scientist of Los Angeles, Calif." In addition, Joslin also employed such therapeutic marvels as "Osteopathy, Chiropractic, Zone Therapy . . . including the latest and most wonderful of all serums known to progressive physicians as the 'Auto-Hemic Serum' as discovered by Dr. L. D. Rogers of Chicago."

For fear, possibly, that some sufferers might be overlooked Joslin admitted that he treated other diseases and urged the sick to "Send For Free Booklet on Other Chronic Diseases." Then followed a list of "Diseases that we are particularly successful in treating." These ran through Asthma, Acne, Aneurism, Appendicitis, Burns, Birthmarks, Chorea and Coryza with Epilepsy, Fissures, Gastritis, Gout and Gray Hair, also Leucorrhea, Leukemia and Locomotor Ataxia along down the alphabet to Varicose Ulcers, Warts and Whooping Cough. For some reason he omitted Xeroderma, Yaws and Zoonosis. Altogether Orin W. Joslin seems to be a most versatile individual. No wonder he left Dodgeville, Wis., for New York City.

ALCINOUS B. JAMISON, M.D., New York City, *Treasurer* and *Chairman of the Council on Pharmacy and Chemistry:* According to our records, this man was born in 1851 and received a diploma in 1878 from the Medical College of Fort Wayne, Ind. A few years ago Jamison seems to have written a book called "Intestinal Ills" that was issued by the Tyrrell Hygienic Institute, the exploiters of a device (with a "patent medicine" adjunct) for giving rectal enemas. This was exposed in THE JOURNAL, Jan. 6, 1917: Another concern in the same line of business calling itself the Eager Colon Cleanser Company issued an advertising brochure puffing its enema and entitled "Dr. A. B. Jamison's Fourteen Reasons 'Why the Internal Bath.'"


THE ANUS AND RECTUM:

THEIR PHYSIOLOGY, ANATOMY, AND PATHOLOGY.

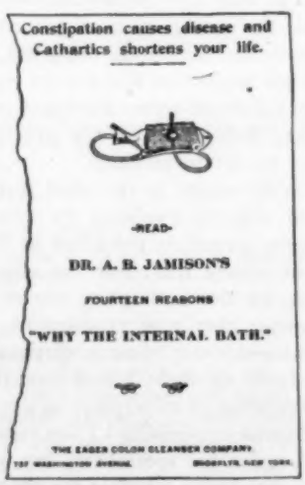
TOGETHER WITH A DESCRIPTION OF RECTAL AND ANAL DISEASES, AND THEIR DIAGNOSIS AND TREATMENT.

BY ALCINOUS B. JAMISON, M.D.

WITH OVER ONE HUNDRED ILLUSTRATIONS.

SIXTH EDITION, REVISED AND ENLARGED

PUBLISHED BY THE AUTHOR,


Constipation causes disease and Cathartics shortens your life.

-READ-

DR. A. B. JAMISON'S

FOURTEEN REASONS

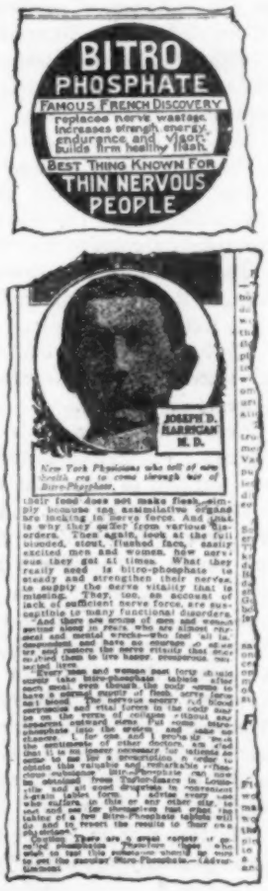
"WHY THE INTERNAL BATH."

THE EAGER COLON CLEANSER COMPANY

Alcinous B. Jamison, "Treasurer" and chairman of the "Council on Pharmacy and Chemistry" of the "American Progressive Medical Association," seems to specialize on "Diseases of the Bowels." Here are reduced reproductions of the title-pages of (1) an advertising booklet describing the dangers of the usual methods of treating diseases of the rectum and anus and the overwhelming superiority of the Jamison method, and (2) of a booklet describing the "Eager Colon Cleanser."

Jamison has also issued an advertising booklet of his own entitled "How to Become Strong." In the preface Jamison states that he has "for thirty-six years devoted his entire professional time and attention to Diseases of the Bowels." This, doubtless, qualifies him for the chairmanship of the Council on Pharmacy and Chemistry. He states that his experience "enables him to speak authoritatively concerning the best system of treatment for intestinal diseases." The booklet has a frontispiece showing what is presumably meant to be Jamison's office with Jamison himself giving a treatment for some rectal trouble. This is described as "The New Scientific Method of Operating upon Hemorrhoids, Fissure, Ulcer, Fistula, etc." A large part of the booklet is devoted to "scare stuff." Various surgical instruments, scalpels, scissors, cauteries, clamps, etc., are shown, and, apparently, for the purpose of impressing the victim with the dangers he will run in going to surgeons for the treatment of his ailments. The booklet also shows certain devices for giving rectal enemas and the reader is told that every purchaser of one of these devices also gets "free" a copy of Dr. Jamison's new book "Intestinal Irrigation; or 'Why, How and When to Flush the Colon.'" Finally, Jamison's name appears as "Chairman of the Section on Gastro-Enterology" of the "Allied Medical Associations."

JOSEPH R. HARRIGAN, M.D., Jamaica, N. Y., *Chairman of the Council on Scientific Research:* According to our records, Joseph D. Harrigan was born in 1860 and received a diploma in 1883 from Bellevue Hospital Medical College. Harrigan's name appears as a member of the Advisory Board of that now extinct organization "The National League for Medical Freedom." The "league," as readers will remember, was exposed by THE JOURNAL as an organization engineered and inspired by "patent medicine" exploiters and those opposed to pure food laws. It led a hectic and turbulent existence while the money lasted and then flickered and went out. We also find the picture of Jos. D. Harrigan, M.D., adorning a newspaper advertisement of "Bitro-Phosphate," a widely advertised "patent medicine." Harrigan is described in the advertisement as a New York physician "who tells of a new health era to come through the use of Bitro-Phosphate." Thus we read:


BITRO PHOSPHATE

FAMOUS FRENCH DISCOVERY

replaces nerve wastage, increases strength, energy, endurance, and vigor; builds firm healthy flesh.

BEST THING KNOWN FOR THIN NERVOUS PEOPLE

JOSEPH D. HARRIGAN M.D.

Part of an advertisement (reduced) of a "patent medicine," Bitro Phosphate, with a testimonial of Dr. Jos. D. Harrigan, who is chairman of the "Council on Scientific Research" of the "American Progressive Medical Association."

"Joseph D. Harrigan, Former Visiting Specialist to North Eastern Dispensatory, says: 'Let those who are weak, thin, nervous, anaemic, or run-down, take a natural, unadulterated substance such as bitro-phosphate and you will soon see some astonishing results in the increase of nerve energy, strength of body and mind and power of endurance.'"

This should qualify Dr. Harrigan to fill with distinction the chairmanship of the Council on Scientific Research.

So much for the personnel of the "American Progressive Medical Association." The letterhead of that organization carries the admonition: "Investigate everything—select the best." We commend this suggestion to our readers. Look over the list here published and "select the best."

Chemical Light.—Practically we have only two sources that contain a quantity of chemical light worth mentioning; namely, the carbon arc light and the mercury-vapor arc light. The difference between these two kinds of lights is in reality very considerable. The carbon arc light contains all the rays of the spectrum, while the mercury light mainly contains the ultraviolet and particularly the short-waved ultraviolet rays with but slight power of penetrating.—Reyn, A.: Artificial Light Treatment of Lupus and Other Forms of Tuberculosis, *Brit. M. J.*, Sept. 22, 1923.

Correspondence

"CONNECTICUT INVESTIGATION OF MEDICAL DIPLOMA SCANDAL"

To the Editor:—In The Journal, November 10, you refer to the "Alexander" medical (?) school of Kansas City as "Eclectic." The Alexander school is not and never was "Eclectic," and does not claim to be such except in a very dishonest roundabout way to deceive a few who may be influenced by such claim.

Dr. Alexander of Kansas City, Mo., is not a member of the National Eclectic Medical Association, nor of the Missouri State Eclectic Medical Society, nor has he been since at Nashville, Tenn., the National Eclectic Medical Association refused to recognize his school in 1917.

The action of the so-called Eclectic Boards we deplore because they are a discredit to the profession in general and to Eclectics in particular.

We have no way of controlling the action of the legislatures of states wherein separate boards represent the various systems of practice.

Every effort was made use of to help eradicate the disreputable examining boards of the state of Florida, and we are gratified to have that stigma removed.

We have in the past and continue now to keep our records free from "disqualified" men, and assure you that no man can obtain or continue a membership with us except on the basis of graduation from a reputable school of medicine or a license to practice in the state in which he resides. A license obtained by fraud is certainly a disqualifying act, and we trust that Governor Templeton of Connecticut and Governor Hyde of Missouri, as well as Governor McRae of Arkansas, will not permit investigation to stop until every fraudulent possessor of a license to practice medicine in either of the states has his license annulled, and the holder thereof punished for his criminal conduct.

We feel that in justice to us you will give the above the same publicity accorded your recent article of above date.

William P. Best, M.D., Indianapolis.
Recording Secretary, National Eclectic
Medical Association.

"NEEDED IMPROVEMENTS IN GRADUATE MEDICAL EDUCATION"

To the Editor:—In The Journal, November 24, under the title, "Needed Improvements in Graduate Medical Education," appears a statement of the position of the Council on Medical Education and Hospitals in relation to graduate medical instruction. Such an announcement makes timely, and in fact invites, comment.

It must be borne in mind that graduate medical education is not and cannot be compulsory; that the physician, once he has obtained his license, may legally practice any branch of medicine, subject only to dictates of his conscience and his fear of malpractice suits; and that if he is to improve himself through further study, such opportunities must be offered to him as he will, himself, freely elect, even though an all-wise providence might prescribe differently. Just the reverse has been true of the process of standardization of undergraduate medical teaching. The Council, together with other similar agencies, had only to persuade the state licensing boards that certain educational requirements were desirable in order to have them enforced as law. The medical student was not asked whether he liked the ruling. If he wanted to practice, he was obliged to comply with the regulation of the board. An attempt to raise the standards of graduate medical teaching more rapidly than the medical profession becomes desirous of such changes will have exactly the opposite effect from that which is intended, for it will drive the students away from the better class of schools which adopt higher standards and cause them to flock to the poorer schools which, though less well equipped, will give them what they want.

In any consideration of graduate medical teaching, it is natural to divide the subject into two parts; namely, training for the specialist, and training for the general practitioner. While in aims and methods these two kinds of training are distinct, in subject matter they are not mutually exclusive. A rigid line of demarcation between the field of the specialist and the field of the practitioner cannot be drawn. In a city of one million inhabitants, specialists of every conceivable variety are accessible, and the sphere of the general practitioner is correspondingly restricted. In small cities, towns and villages, specialists do not and cannot exist, and therefore the sphere of the general practitioner is necessarily enlarged. It is in this zone common to both that sound judgment and wise administration are needed in order to provide both groups of graduate students the opportunities they legitimately seek.

Dr. Frank Billings, in the columns of The Journal, has stated that the family physician should be able, in 85 per cent. of the cases that come to him, to make a diagnosis without calling in a specialist. Dr. Wilbur, President of the American Medical Association, addressing the Medical Society of the County of New York, has voiced the same sentiment. To enable the profession to realize this ideal is the chief objective of postgraduate medical education. To increase the diagnostic ability of the general practitioner so that his services may be of the greatest value to the community in which he lives should be the first principle in the organization of graduate medical instruction. To this end, the opportunities for the general practitioner should be enlarged, not curtailed. Certainly, he should not be denied the opportunity to refresh his knowledge of those subjects which constitute a part of the required curriculum for undergraduates. The late Dr. Biggs may have somewhat overstated his case when he said that the average medical practitioner was fifteen years behind the times, but we all recognize that there are many members of our profession who are not equipped to give to their patients the benefit of recent advances in medical science. To remedy these deficiencies is the greatest service medical educators can render to mankind.

With regard to the ideal training of specialists, the excellent reports, compiled by men eminent in their respective fields, heretofore published in The Journal, leave little to be said, except this: that the men who wrote these reports did not, for the most part, receive their special training in the manner they now recommend. The process by which they achieved their present distinction was much slower, more arduous no doubt, but at least they had the benefit of a broad foundation of experience in general medicine. It is too early to speak confidently of the results of the proposed system of education for specialists; but one may be pardoned, perhaps, for wondering whether the short standardized course will not tend to accentuate the deplorable tendency to regard patients as "cases" of a disease, rather than as persons who are sick.

Undoubtedly there are many "half-baked" specialists who bring diseredit on our profession and who are a menace to the public, and of these the greater number aspire to be surgeons. They have multiplied exceedingly in recent years coincidently with the rapid increase in the number of hospitals. Few men, I judge, are so conscienceless as to undertake a major operation without having previously wielded a knife. The dangerous amount of knowledge is secured, as a rule, in a hospital, where, as intern, one may secure in a brief time familiarity with operative technic and, too often, unwarranted

self-confidence. Hospitals having a short surgical service, in many cases six months or less, are, in my estimation, the hothouses in which are bred most of our irresponsible operators.

In view of the beneficent influence of the Council on Medical Education during the last twenty years, it may seem gratuitous to take exception to its pronouncements; but the importance of this subject of graduate teaching leads me to point out that, in spite of the declaration that "the Council is not attempting to prevent any physician from getting any course he needs, nor is it trying to assume authority over any individual or graduate teaching institution, or to prevent them from offering to physicians any courses they see fit," the action of the Association in refusing to print the advertisements of courses not approved by the Council does, in effect, and to the extent of the Council's ability, prevent physicians from taking, or schools from offering, such courses.

WILLIAM D. CUTTER, M.D., New York.
Dean, New York Post-Graduate Medical
School and Hospital.

[COMMENT.—The physician will be in better position to know what courses to "freely elect" if each short course given by any graduate school is arranged with other short courses in a graded series, and if, in the printed announcements, each short course is described so as to show its subject content; its duration in weeks or months; the hours and days of the week when given, and the name of the teacher in charge. At present, unfortunately, this knowledge is seldom satisfactorily obtained from the announcements of the school, and the physician is forced to make a selection blindly from a maze of unstandardized short courses, which may or may not provide him with the instruction he most needs. The development of graded courses for both general practitioners and specialists is being urged for the very purpose of "enlarging and not curtailing" the opportunities for graduate medical instruction which on due investigation may be found worthy of approval by the Council. It will also meet the increasing number of requests from physicians asking where "good courses" in various subjects may be obtained.—ED.]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BROMID IN A SALT-FREE DIET

To the Editor:—Is the use of bromids to flavor foods, in cases in which salt-free diets are indicated, permissible? Please omit name.

R. N. Y.

ANSWER.—In view of the fact that bromid is capable of partly replacing chlorid in the system, and that it is distributed just like chlorid in the fluids of the body, bromid would be as objectionable as chlorid in cases in which a salt-free diet is indicated. It would, in fact, be more objectionable, owing to the liability to produce bromism.

SANTOPERONIN

To the Editor:—Physicians in China look to THE JOURNAL for information concerning proprietary medicines. A number of foreign proprietaries are extensively exploited there and advertised in the *China Medical Journal* and other journals which are not exploited, apparently, in this country. Occasionally, one of these drugs is exposed in German medical journals. For example, I was asked in China repeatedly in regard to Santoperonin. I now find that Heubner, in the *Klinische Wochenschrift* (2: 1483, 1923) has a note on it. We do not get the *China Medical Journal* here, so I cannot keep track of it. Would it not be possible to have a brief statement of its composition included in Queries and Minor Notes? H. R., M.D.

ANSWER.—According to Heubner, the history of santoperonin, which is claimed to be an ascaricide, does not arouse confidence. The proprietary was placed on the German market before satisfying the requirements that should govern the introduction of new medicaments. Its composition has varied; the exploiter has maintained an air of secrecy concerning the identity. Heubner states, however, that unbiased examinations of the product seem to show that it is a mixture of copper oxid (38 per cent.) with organic material which essentially consists of aromatic (azo?) combinations. There seems to be little clinical evidence to warrant its use, and so far there is no justification for believing it is even as good as santonin.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, January 8. Chairman, Dr. Samuel W. Welch, Montgomery.

COLORADO: Denver, January 8. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

INDIANA: Indianapolis, January 8. Sec., Dr. W. T. Gott, State House, Indianapolis.

NORTH DAKOTA: Grand Forks, January 1-4. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

OREGON: Portland, January 2-4. Sec., Dr. Urling C. Coe, Stevens Bldg., Portland.

SOUTH DAKOTA: Pierre, January 15. Dir., Dr. H. R. Kenaston, Bonesteel.

WASHINGTON: Olympia, January 8. Sec., Mr. William Melville, Olympia.

WISCONSIN: Madison, January 8-10. Sec., Dr. J. M. Dodd, 220 E. Second St., Ashland.

INVESTIGATION OF LICENSES IN CONNECTICUT

Last week THE JOURNAL published the record of Frank Edward Gavlas, who is involved in the Connecticut licensure investigation. Three weeks ago we published the record of Donald W. Stewart. This week the report concerns George E. Sutcliffe.

George E. Sutcliffe

According to our records, George E. Sutcliffe was born in England in 1875; attended the St. Louis College of Physicians and Surgeons, 1917-1918, and was graduated by that institution in 1918. Our records indicate that he was licensed in Colorado in 1920, and in Connecticut in 1921; that he was in St. Louis in 1920; Wray, Colo., in 1921; Vernon, Colo., in 1922, and temporarily at Unionville, Conn., and St. Louis in 1922. In the publicity connected with the Connecticut scandal, one of the first men to come into the limelight was George E. Sutcliffe. According to the Hartford *Courant*, he confessed to the states attorney the facts regarding his medical education. In his confession, he named Dr. Waldo Briggs, dean of the St. Louis College of Physicians and Surgeons, as the person who secured the false credentials for him, and "revealed that he had two diplomas from the St. Louis institution, one purporting to show that he was graduated in 1918, and the other that he was graduated in 1920. He said that he also bought a diploma in a somewhat similar manner for a friend, paying $150 for it."

The following is in brief the record of Sutcliffe according to the published confession. In 1918 he was a photographer in St. Louis. A student at the St. Louis College of Physicians and Surgeons introduced him to Dr. Waldo Briggs. He told Briggs that he did not have a high school diploma, and Briggs said that he would fix it up, and also told him he would get him through in two years. The high school certificate, he said, was obtained from Prof. William P. Sachs for $25. Since Sutcliffe had no money, he arranged to pay Briggs by taking care of the books of the college. In 1919, he obtained a diploma for a friend for $50. The signatures were not good, so Dr. Briggs prepared another diploma for $150. When Sutcliffe completed the work in 1920, he said, he received two diplomas, one dated 1918 and one 1920. "Doctor Briggs gave me the 1918 diploma," said Sutcliffe, "because as he explained the state board of health of Missouri recognized persons who were graduated from the school prior to 1919." Sutcliffe took a quiz course and passed the examining board of Colorado in 1920. He practiced two years, and then through reciprocity was certified by the latter state to Connecticut.

Book Notices

HANDBOOK OF TUBERCULOSIS FOR MEDICAL STUDENTS AND PRACTITIONERS OF MEDICINE. By John Ritter, Ph.G., M.D., Assistant Professor in Medicine (Department of Tuberculosis) Rush Medical College, Medical Department of the University of Chicago. Cloth. Price, $6. Pp. 572, with 64 illustrations. Chicago: Published by the Author, 1923.

There was difficulty during the World War in obtaining a sufficient number of tuberculosis experts to examine the soldiers. They were a necessary part of examining boards, most hospitals presumably had at least one, and tuberculosis hospitals had a number of them. With a filter so fine, patients still leaked through with a wrong diagnosis. Not a few were shipped from France to selected points inland at home where climate, equipment and staff were ready to do everything possible to restore them to health, but who could not respond because they did not have tuberculosis. Experts disclosed that in an early report on French soldiers who were said to have tuberculosis, there were many included who did not have the disease. Thus war demonstrated that the average physician recognizes early tuberculosis poorly. This book represents in large part the lectures and demonstrations given by its author at a medical school. It more than covers the subject, including, perhaps, too many things that have been written on tuberculosis. Can an undergraduate student find the essential features? Why ask a student to study Friedman's vaccine, Marmorek's serum and Maragliano's serum when he should be studying chests or interpreting roentgenograms? Why expatiate on the sputum albumin test when the proper staining and search for the tubercle bacillus are what the undergraduate students need? *Bacillus leprae* and *Bacillus smegmatis* should not be considered among "other varieties" of the tubercle bacillus. Perhaps there is too much said also about inherited tuberculosis. It is said in a later chapter that "primary infection usually takes place after birth and is then spoken of as extra-uterine or postnatal, in contradistinction to that infection which takes place occasionally before birth which is known as intra-uterine or prenatal." This magnifies an almost negligible subject—intra-uterine infection. The chapter on tuberculin is interesting. The technic of tuberculin dilutions and injections is clearly stated. The gist of the chapter is, "Tuberculin in itself never has, never can, and never will cure a case of tuberculosis. But it is a most valuable adjunct in the fight if aligned with fresh air, good food and out-of-door life. In specially selected cases its use is undoubtedly indicated." A student will seldom read a better discourse on the "primary focus of infection" than is found in Chapter VI. This book is not well edited; and, what is more important, it fails to present the fundamentals so that a student must recognize what is essential to recognize early tuberculosis.

THE SECOND INTERNATIONAL EXHIBITION OF EUGENICS, held September 22 to October 22, 1921, in Connection with the Second International Congress of Eugenics in the American Museum of Natural History, New York. An Account of the Organization of the Exhibition, the Classification of the Exhibits, the List of Exhibitors, and a Catalog and Description of the Exhibits. By Harry H. Laughlin. Cloth. Price, $3. Pp. 155, with 47 illustrations. Baltimore: Williams & Wilkins Company, 1923.

This report of the extensive and attractive display of illustrative material at this congress of eugenics is evidence of two things: the important rôle which exhibits have come to play in the extension of propaganda and the education of the public, and the wide range of the activities of students of eugenics. Illustrations for this exhibit were taken from the sciences of anthropology and archeology, embryology, psychiatry, hemology, the science of statistics, genealogy, sociology and many other fields of human interest. The reproductions of the illustrative material, mostly wall charts, are of sufficient size and clearness to convey a correct idea of the full size originals. An idea my be gathered of the comprehensive nature of the display by mention of some of the illustrations: statuette of the average American male; the chromosomes of man; approaching extinction of the Mayflower descendants; miscegenation in Hawaii; heredity of longevity; palm and sole prints and their inheritance; inheritance of specific isoagglutinins of the blood; heredity of harelip and cleft palate; pedigrees of artistic and musical talents. There is no more effective way of arousing the interest of large numbers of persons and directing their thought to a subject of this sort than by such an exhibit as is described in this book.

DIE NEUEREN CHEMOTHERAPEUTISCHEN PRÄPARATE AUS DER CHININREIHE (OPTOCHIN, IM BESONDEREN EUKUPIN UND VUZIN) UND AUS DER AKRIDINREIHE (TRYPAFLAVIN RIVANOL). Eine kritische Besprechung des bisherigen Erfolges und der Grundlagen der Therapie. Von Ernst Laqueur, Direktor des pharmakologischen Instituts Amsterdam. Unter Mitwirkung von A. Grevenstuk, Assistent am pharmakologischen Institut Amsterdam, A. Sluyters, I. Assistent am pharmakologischen Institut Amsterdam, und L. K. Wolff, I. Assistent am hygienischen Institut Amsterdam. Paper. Price, 75 cents. Pp. 91. Berlin: Julius Springer, 1923.

The important fact that a true beginning has been made toward the production of chemotherapeutic agents that may selectively attack bacteria within the living body, just as other agents specifically attack protozoa, has naturally aroused widespread interest. As yet, however, the laboratory and clinical evidence is in an immature state and, as always is the case in such episodes in medicine, only favorable results are likely to appear in the literature. One therefore welcomes this critical review of the literature, supplemented by personal observations from investigators not directly connected with the manufacturing organizations that produce the substances now under trial. In this monograph the published reports are discussed critically, with careful consideration of the fundamental principles of chemotherapy as a background. Particular emphasis is laid on the present difficulties of transcribing experimental results and methods to clinical application. The authors prefer not to draw any definite conclusions from the existing evidence, but give as their personal view the following careful statement: "All the substances mentioned in the title can be of benefit, but benefit is to be expected only in the hands of good physicians, and while using them he must always remember that he has in his hands no perfected, specific curative, therapeutic agent." They also recognize the fact that, although we have as yet not found an ideal curative agent for the pathogenic cocci, it is remarkable that so much has actually been accomplished in such a short time. This amount of success gives us grounds for hope that the path pointed out by Ehrlich and followed by Morgenroth, his pupil, may in time lead to success. It is to be noted also that in this monograph by no means all the chemotherapeutic agents recently tried with more or less success have been taken into consideration. In brief, this monograph is a timely and valuable recapitulation of what has been accomplished thus far in one of the most important new fields of medical research.

THE PRACTICAL APPLICATIONS OF X-RAYS. By G. W. C. Kaye, O.B.E., M.A., D.Sc., Head of the Radiology Department, The National Physical Laboratory. Cloth. Price, $5. Pp. 135, with 96 illustrations. New York: E. P. Dutton & Co., 1923.

This book contains the information given by the author in his Cantor Lectures before the Royal Society of Arts. Three chapters are devoted to a description of the nature of roentgen rays, the modern tubes used in their production, and the high potential generator. Much of the material is of a highly scientific nature, requiring a knowledge of higher mathematics. The author presents numerous graphs and diagrams which greatly enhance the value of the book. Chapter IV gives a detailed discussion of the measurement of roentgen rays; the medical application is barely mentioned. The use of roentgen rays in the industries is particularly stressed. Of unusual interest is the presentation of the use of the roentgen rays in the detection of spurious paintings of Rembrandt, Rubens and other masters. An important application is in the aeroplane industry for the discovery of weak portions of material that enters the structures of the planes. Another phase is that of determining the symmetry of the core of the golf ball which, in some instances, is considerably out of center as well as shape, thus explaining the failure of proper flight of some balls—a new alibi for the dub golfer. The average roentgenologist and physician will learn that the medical field is only a small part of the many uses of the roentgen ray. Three instructive appendixes on radiation protection, nomenclature and atomic numbers have been added. The illustrations are excellent, and the subject matter is exceptionally well handled.

Miscellany

CERTAIN ELECTRICAL DIAGNOSTIC AND THERAPEUTIC METHODS FROM THE STANDPOINT OF A NEUROPSYCHIATRIST

THOMAS J. ORBISON, M.D.
LOS ANGELES

From time to time it becomes necessary, and more or less important or imperative, to make a serious test of what most of us might prefer to allow to die by the age old processes of "trial and failure." The medical profession has seen so many such trials and failures that we feel a natural distaste at the prospect of combating even the more extensive waves of pseudomedical folly, which have their origin in the conception of mental deviates, most of whom exhibit paranoid tendencies. The history of most of them is much the same: first, the paranoid conception, preferably with a pseudoscientific terminology; second, a label, which will "sell" the conception—this is the commercial feature of it; third, let us call it psychic autointoxication—this is the epidemic phase of the disorder. Some of them take on a semireligious aspect as a part of their symptom complex. All of them have two features in common, apart from their medical, pseudomedical or antimedical tenets: (1) the selling label and (2) ultrarational sanctions. The latest of them has attempted, attained and broken all altitude records (by altitude,-I mean distance away from rational and scientific bases).

In October, 1923, an opportunity presented itself in Los Angeles to examine into the diagnostic and therapeutic values of the apparatus and methods employed in the electronic reactions of Abrams. This came about through the medium of a justice court case, in which testimony was under oath and in which a wide latitude was given in the matter of the giving and taking of the testimony so as to arrive at a more or less unrestricted view, both of the legal action at issue and the larger matter of the Abrams methods of diagnosing and treating disease.

Four of the high lights of the two and a half days proceedings were: 1. A thorough and nonmedical technical examination of the various apparatus used by the Abrams disciples. This examination was made, at my request, by Prof. R. A. Millikan, head of the California Institute of Technology, Pasadena, a physicist of the first rank, a Nobel prize man and an acknowledged authority in the realm of physics and electricity. His examination consisted of three phases:

(*a*) One which was carried out alone with the doctors who were practicing it (i. e., the Abrams method).

(*b*) Listening, for the greater part of a day, to the testimony regarding it by the same and other disciples of Abrams.

(*c*) Being present when the court adjourned to the offices of two of these men and observing a typical séance or examination, in which one of the lawyers acted the part of a patient and was "diagnosed," and during which I was given the opportunity to take part in the examination and took the place of the diagnostician.

2. The opportunity of a physician (myself), who is not an Abrams disciple, (*a*) to note at first hand and actually to take part in the "diagnosis" of a patient in the presence of and according to the personal direction of a number of those who practice the Abrams method; (*b*) to see patients being treated, and (*c*) to listen to and examine a few who had been "cured" or were in the process of a "cure."

3. The qualifications—medical and otherwise—of some men who are practicing the Abrams methods and who are treating "hundreds" of patients daily, and to listen to their sworn testimony on the witness stand and to their observations off it.

4. The kinds of diseases treated by them and the attitude of the patients at present under treatment and those who have "quit" taking treatments.

THE ABRAMS APPARATUS

As to the first point, Professor Millikan not only wrote me a concise opinion covering this matter, but also enlarged on the whole subject in a lecture which he gave before the Southern California Medical Association on the night of November 3, last. A careful perusal of his letter will give to any one the opinion of a qualified expert as to the values of certain apparatus for which various claims have been made. Some of these claims are those of windy enthusiasts, but others are those of men who have more carefully testified under oath and who have in their possession certificates to practice the healing art in a sovereign state and who are daily treating by this particular method patients known to be suffering from cancer, tuberculosis, syphilis and other "killers" among diseases, as well as others in whom the diagnosis may be faulty and who may not be suffering from any disease, provided the diagnosing apparatus and method are faulty. And this is the important kernel of the whole matter—whether the diagnosing and treating apparatus and method are or are not faulty. Professor Millikan wrote:

"I have spent the greater part of a day in listening to the description by doctors who use the so-called 'electronic method of Abrams' of that method, and in a very careful examination of the instruments and technique of the method itself. As you will remember, I made a portion of this examination of the Abrams method when I was alone with the doctors who were practicing it, and another portion when you yourself were present and took part with me in the examination.

"I scarcely need to say to you, or to any other intelligent man who has examined the method, that I do not consider that it rests upon any sort of a scientific foundation whatever. Indeed, from the standpoint of physics the claims set up by Abrams and his followers are the height of absurdity. They talk about finding the vibration frequency or vibration rate of each particular kind of disease, and they then claim that they can destroy the micro-organism which has that vibration rate by imposing upon it from without its own frequency or vibration rate. Yet when they are making a diagnosis they attempt to find the natural frequency of the disease by inserting more or less electrical resistance into a circuit which cannot oscillate at all and therefore has no vibration frequency, and if it could oscillate the period would not be changed at all by inserting more or less resistance. In other words, the setting of the dials of the resistance box upon different buttons cannot possibly make it respond to different frequencies, since the electrical system used is, in the first place, one which cannot oscillate any way, and, in the second place, if it could oscillate it would oscillate in the same period, whatever button of the resistance box the dial was turned to. So that the claim that a diagnosis can be made by turning the dial to different buttons and thus tuning in to different frequencies simply indicates complete ignorance of the fundamental laws of physics by the one who makes it.

"Secondly, in the treatment of the disease they claim that they impose upon the micro-organism its own vibration frequency, yet what they actually do impose for the treatment of all diseases is one and the same vibration frequency, since in the treatment, as well as in the diagnosis, the turning of the dials to different buttons cannot in the nature of the case change at all the impressed frequency. Furthermore, the actual impressed frequencies is of the order of 400 or 500 vibrations per second, as can be seen from the fact that it is heard in the ordinary telephone, and such an instrument is capable of responding only to frequencies of this low order of magnitude. But if a micro-organism has any natural frequency at all, it would have to be millions of times higher than any audible frequency of the kind they use in the treatment, so that the claim that they are finding and then imposing upon the disease its own natural frequency is simply the

height of nonsense in view of the kind of physical mechanism with which they are dealing.

"Finally, it is true that the electrons inside of atoms give off, under suitable stimulation, frequencies of definite period which are properly called electronic frequencies. These frequencies are billions of times higher than any which the Abrams people are using in the treatment, so that the use of the word 'electronic' in connection with the Abrams method is simply wholly misleading and unscientific.

DIAGNOSIS AND TREATMENT

As to the second point, most of the men whom I met and who are using the Abrams method are, like myself, licensed physicians and surgeons in the state of California. Most of them stated that their "course" under Abrams lasted only a few weeks. It is my opinion, based on observation, that the ability to acquire and practice his method does not require a high level of medical intelligence. Furthermore, the actual diagnosis of the patient (whether the patient is present or a drop of his blood is placed in the "dynamizer") depends on certain facilities which every medical student learns very early in his course; namely, observation, palpation, auscultation and percussion. There is nothing mysterious or that requires exceedingly difficult technic in the actual procedure of diagnosing disease by the Abrams method in the hands of any ordinary physician, provided he stipulates and assumes certain formulations and working hypotheses laid down by Abrams himself. And this is the kernel of this particular nut —Abrams by himself and on his own authority abitrarily lays down certain assumptions and hypotheses and preaches them dogmatically. Furthermore, they must be accepted in the same spirit by his disciples. If he is right, then they are right and their patients are in safe hands, and vice versa. In this respect his cult resembles a religious cult, because every religious cult demands certain *ultra*rational sanctions. There is no religion that does not do this, as far as I know. According to Benjamin Kidd,[1] "the essential element in all religious beliefs must apparently be the ultrarational sanction which the religions provide for social conduct."

Regarding the sanctions demanded by Abrams, they might better be termed *pseudo*rational, rather than *ultra*rational, in the light of the expert opinion concerning their apparatus of scientists, such as Professor Millikan, and their medical values in diagnosing and treating disease arrived at after examination of them by qualified medical experts. In any event, some of them are as follows, and even a glance will show the conscious and determined attempt to give an *ultra*scientific flavor to the whole thing through the use of terminology and sanctions that are *ultra*scientific, and assumptions and arbitrary deductions that are *pseudo*scientific. What are these sanctions and assumptions? All of the following were brought out under oath:

1. All matter possesses certain wave length values. Having found the wave length, one can do certain things to matter. Example: Caruso determined the tone (wave length) given by a glass vessel, when a violin bow was drawn across its edge; he then sang into it that tone; the vessel was shattered into countless particles. This particular episode fired a fuse in Abrams' imagination that apparently blew up a whole mine of ideas, according to the testimony of one of his disciples.

2. Disease micro-organisms are matter; ergo, they have their own wave lengths (one man called them emanations, and went so far as to say he had heard them over a radio).

3. Having determined these wave lengths and discovered a method of imposing its own wave length on a given micro-organism, one can, so to speak, "shatter" it. The last assertion is one of the sanctions that no one but Abrams claims to have proved. The question might arise, why should it not do a number of other things rather than shatter or destroy? Thus far we have confronted nothing inconceivable.

4. Abrams alone claims to have discovered the wave length of certain definite micro-organisms which are etiologic factors of certain well known diseases. It has not been stated anywhere that I know of what were the various steps taken by him in his discoveries or the apparatus used. These things are very important in scientific investigations—for one reason, in order that other investigators may check up the findings. We cannot follow him here because of lack of scientific data.

5. (This seems to be a very extensive gap). The claim is made that there are certain apparatus, to which Abrams has given names, which (*a*) can and do indicate these various wave lengths in terms of "ohms" (diagnose the disease) and (*b*) others which can be and are used effectively in applying to an individual who is acting as the host to any of the disease micro-organisms that have been diagnosed such vibrations as will shatter or destroy the micro-organisms causing his disease or diseases—this last apparatus "clears the blood" of the patient and "clears" him. All this not only lacks any confirmation but has been disproved.

6. (Another gap of assumption). One drop of blood contains all the elements of an individual necessary to a diagnosis of any or all the disease micro-organisms with which he is infested. (The testimony of some of Abrams' disciples goes much further than this). Ergo, one drop of blood may be used instead of the patient, because a part of the diagnostic apparatus—the "dynamizer"—is so constructed as to obtain this result, provided the drop of blood (say, on a blotter) is placed therein. Thus, either the patient or, in his or her absence, a drop of blood may be used.

7. (Other very wide gaps of assumption). (*a*) A "reagent" is injected into the path of the vibrations in the person of an individual whose blood has been "cleared" by this method.

(*b*) He must face West.

(*c*) A man can be reagent for a woman patient. (Query—Could a diagnosis be made of a malignant tumor of the ovary or uterus? I have no doubt that Abrams could bridge that gap—to his own satisfaction.)

(*d*) On the body of this reagent is reflected the diseases in the body of the patient, either he or she or a drop of blood being utilized.

(*e*) The disease "finder" (a third electrode used for localizing disease sites, e. g., sinusitis, heart disease and so on—may be held quite a distance from the surface of the "reagent's" body. This makes a real gap or jump for the vibrations.

(*f*) It is not made clear what has been discovered as to the vibrations, emanations and wave lengths of body tissues necessary to health, or of the benign or beneficent micro-organisms circulating in our bodies, e. g., the leukocytes.

(*g*) Arbitrary sites for disease organs are laid down with geographic precision on the abdomen of the reagent. These have been discovered by Abrams alone, and must be accepted by his disciples as exact sites. Use is made of these sites as follows: If the patient has, let us say, congenital syphilis, then a reaction is had over one of these sites on the reagent; acquired syphilis on another, and so on.

There are many other gaps of assumption between one's reason and Abrams' Promised Land.

Take all these observations together and they seem to demonstrate clearly that there are more gaps than solid bases; therefore any structure built on them must necessarily be air castles rather than scientific construction.

OBSERVATION OF PATIENTS

As to the fourth point, personal observations of patients, "cured" and under treatment, in the offices of Abrams disciples and seen with them:

CASE 1.—A woman, aged about 45, now an assistant in the office of Dr. J. (one of Abrams' disciples), with a diagnosis

1. Kidd, Benjamin: Social Evolution, 1907.

of cancer (she had been operated on for the removal of carcinoma of the breast by a "regular" surgeon) claims to have been cured by the Abrams method, because her breast has entirely healed up and is now apparently without malignancy, although she says it was red and angry looking when she began to take treatments. Examination shows an excellent surgical result in the breast, but a large mass in the adjoining axilla, about the size of my fist. She says and Dr. J. (the Abrams disciple who "cured" her) says it is not malignant, and she seems quite happy and contented about it. Both look on the result as a brilliant "cure" to the credit of the Abrams method.

CASE 2.—A woman, aged about 35, with a sarcoma within the abdomen, is under treatment, and a cure has been explicitly promised by Dr. J. and is fully expected by the patient. She was showed to me as a brilliant example of how a tumor "melts" away under treatment. If one takes her word for it, her abdomen is now reduced to normal dimensions and is no longer so tender that she could not bear to have any thing touch it, as it was before taking treatments. She is obviously in a most happy and exalted state of mind.

CASE 3.—A woman, aged about 30, was lying on a treatment table and being treated for tuberculosis of the larynx. The diagnosis, she said, had been made by a regular physician, and little or no hope of cure extended to her until she had come to Dr. J. He was treating her by placing electrodes about her neck, connecting them with the oscilloclast, which was tuned in to tuberculosis. With the greatest assurance Dr. J. pointed her out to me as surely to be cured. On her face was the same hedonic expression one sees on the faces of religious devotees or those who have been saved from some terrible plight. Only a great emotional actress could portray her expression, for it was the expression of one looking through the gates of heaven after having escaped the clutches of death. I have no doubt that such cures could be marshaled by companies right here in Los Angeles.

QUALIFICATIONS OF MEN PRACTICING THE ABRAMS METHOD

As to the third point, what are some of the side-lights brought out in this case? One is the personnel of the men who are practicing the Abrams method. Some that I saw are "hacks" and some are "quacks," but the terrible fact remains that all have certificates to practice the healing art in the state of California, and some of them in other states.

Not all of the Abrams disciples are ignoramuses, by any means. Some have had good medical education. Some of them, I believe, are really deluded by strong suggestion and eccentric motives into a belief flavored by hope and blinded by apparently successful cures. Many, of course, I suppose, go into it as into any speculation, from purely mercenary motives.

QUESTION THAT FACES PHYSICIANS

The question for us is, What shall we do about it? The crux of the whole matter is an old, old one: the gullibility of the public, plus the avarice and immorality of a part of the medical profession.

As long as medical practice is stood up in the market place to be knocked down to the highest bidder, and the healing art placed in the soiled hands of ignorant and immoral practitioners by popular vote, so long will quacks and charlatans abound and wax fat. This state is an inglorious example of the misuse of such terms as "fair play in medicine" and "personal freedom." The former leads to quackery under the mantle of science, and the latter ties the hands of intelligence and gives free rein to the moron. As to Abrams and his tribe, their state certificates to practice the healing art should be taken away from them.

I base this deliberate statement on the following:

1. The apparatus used in the Abrams method have been found to be worthless from the standpoint of electronics and physics, and useless from the standpoint of medical science.

2. The very names and terminology utilized in this method have been proved misleading.

3. The method has not passed the acid test of scientific bodies competent to make such tests. As yet neither the Rockefeller nor any other accredited group has sanctioned it. On the other hand, Abrams has consistently refused to submit himself and his method to the scrutiny of qualified investigators.

4. The propaganda used by him and his disciples is the same well known propaganda of the fraudulent "cancer cures," "consumption cures," "kidney cures" and "diseases of men cures." These have been declared frauds, and their exponents deprived of their certificates to practice medicine.

5. The man or woman who obtains a certificate to practice medicine must be able to show sufficient educational qualifications. In order to practice medicine, he or she must be able to give to his or her patient certainly the average qualifications for diagnosing and treating disease. These are obtained only by previous study in medical schools. There is not a single medical school which sanctions the Abrams methods. Therefore the physician who holds himself out to be an M.D. and throws into the discard the methods he has been taught and which are accepted as the tenets of medical science has no right to practice medicine. If he continues so to do and uses methods proved to be false and contrary to all science, and in addition holds out promises that are false and takes money for so doing, then he should not only forfeit his certificate to practice but should be serving an indeterminate sentence for fraudulent practices.

Federal and state laws hold us as physicians to strict accountability in the matter of the possession and dispensing of narcotics. Is it not more heinous and dangerous to possess and dispense fraudulent promises? Which is the greater fraud—to sell a "salted" gold mine and fake oil units, or to sell faked diseases and faked cures to the same family? And what is more dangerous and abominable than to promise and pretend to cure real diseases and thereby lull into a false sense of security those who are surely going to die, if their disease is allowed time in which to intrench itself?

Westlake Professional Building.

FORECASTING THE POPULATION OF THE NEW YORK REGION

Forecasting the populations of the future is a problem that faces large cities. There are a number of methods based on the population figures of the past. The trend of past population changes is determined, and this trend is extended into the future. The difference in forecasting methods lies chiefly in extending the curve that represents the future aggregates. In a mathematical calculation of future populations, the factors that must be considered are: (1) a definite area on which the population grows; (2) a definite upper limit to the number of persons who can live on that area; (3) a lower limit to the population, which is zero; (4) the epochal character of growth (epochs marking advances in human culture and economy permit given areas to support more people), and (5) the rate of growth in each epoch, which varies, being slow at first, then increasing in rate to a maximum, then decreasing until almost a stationary aggregate is maintained. With these, Pearl and Reed developed a mathematical equation which indicates that the population of the New York City region in the year 2000 will be 28,800,000, or about three times the present population (Pearl, Raymond; and Reed, L. J.: Predicted Growth of Population of New York and Its Environs, 1923). According to the prediction equations, the population at that time will have a tendency to stabilize, the one outstanding exception being that the number of foreign born will ultimately tend to stabilize at about 1,525,000, which is far below the number predicted for the year 2000. The negro population will have tripled and will then constitute 5 per cent. of the population, whereas it is now but 2.6 per cent. The mathematical theory applied to this problem has been applied to the populations of all the large countries and

to several large cities. According to the authors, the agreement in all of these cases between the observed values and those of the equation is of the same order as that usually found in applying a mathematical law to measurements in the field of science. The probable errors in a calculation of this kind would seem to be greater in the case of the elements of the population than in the case of the population as a whole.

Medicolegal

Appeals from Orders of State Medical Board

(Rutledge v. State Medical Board (Ohio), 140 N. E. R. 132)

The Supreme Court of Ohio, in reversing the judgments of the court of common pleas and the court of appeals and in remanding the cause for a proper hearing, says that the petitioner, after having been refused a certificate to practice medicine under the limited practice act, had filed a petition for review in the court of common pleas, which dismissed his petition and was sustained therein by the court of appeals. This controversy involved the construction of Section 1276 of the General Code of Ohio, which provides for an appeal in certain cases from the action of the state medical board to the court of common pleas. An examination of that section, and of other related sections, discloses that, although the right to an appeal is granted, the procedure and the formalities attending the perfection of such an appeal are not provided. Since the statute makes no provision for the formalities, and since it is quite clear that it was intended to grant the right of appeal, the court should not resort to technicalities, or place difficulties or stumbling blocks in the way of a person desiring to appeal any such case, but it should be held, on the contrary, that any notice to the medical board of his desire to appeal, or call on that board for a certification of the papers and records to the court of common pleas, indicating his purpose to appeal from the action of the medical board and his desire to have his case heard on appeal in the court of common pleas, should be sufficient to invoke the action of that court. It was urged, indeed, that no pleadings are required, or are even permissible, and in this view of the matter this court concurs. It must be agreed that practically all of the petition filed in this instance in the court of common pleas of the county of the petitioner's residence, except that part stating his grievance, desire to appeal, and demanding a certification of the papers and records to such court, was immaterial, and should have been treated as surplusage. The applicant being entitled to have a hearing, the medical board should have certified the papers to the court of common pleas, and the court should have proceeded to hear the case on appeal.

It was urged, however, that, since counsel for the petitioner saw fit to set out at length his petition, the medical board might demur to it and thereby raise the question whether or not it stated a cause of action, and also the question of the court's jurisdiction of the subject matter; and the demurrer filed did allege these two grounds. The grounds for sustaining the demurrer were not definitely stated. If it was on the theory that a petition was not the proper procedure, the judgment was, for the reason already stated, erroneous. Or, if the court had in mind to determine whether the facts stated in the petition were such as to entitle the petitioner to a certificate, a proper conclusion was not reached because the demurrer necessarily admitted the truth of the allegations in the petition that the petitioner had passed the examination and was not guilty of any of the things that would constitute a bar to his admission to practice.

It is not the province of this court to lay down rules or formalities governing an appeal in such cases, but it is proper for this court to state that on his appeal the petitioner was entitled to have a hearing, and the matter to be heard was the question of his right to a certificate. The length of the petition filed by him was a misconception for which he was not altogether to blame, since no procedure had been laid down by the statute. In other words, this court has reached the conclusion that the petitioner was entitled to an appeal, and to have the matter heard by the court of common pleas on appeal, and that the hearing should involve the merits of his claim, and not necessarily the truthfulness of the allegations of his petition.

Pneumonia Following Lowered Resistance from Heat

(Hoag et al. v. Kansas Independent Laundry (Kan.), 215 Pac. R. 295)

The Supreme Court of Kansas, in affirming a judgment in favor of the defendant in this action brought to recover for the death of an engineer employed by the defendant, says that the engineer, who, as part of his employment, cleaned his boilers, was overcome by excessive heat of the boilers while cleaning them. He was not prostrated, but was disabled. The disability was that his power of physical resistance was reduced so that pneumonia bacteria immediately became active, and he died of pneumonia seven days later. The court holds that his death did not result from personal injury by accident, within the meaning of the workmen's compensation act.

It is now generally recognized that what is known as heat stroke is an accident, within the meaning of compensation laws; and frostbite has been placed in the same category. When personal injury by accident has occurred, compensation may be recovered for disability and disease consequent on the injury. This engineer knew about the heat of boilers, which on the occasion in question was excessive, either in relation to the usual temperature when the boilers were cleaned, or in relation to ability to withstand the heat incident to cleaning them. In either case the engineer was inattentive to or misjudged the effect of the temperature on his power of endurance. For this reason, what happened to him was unexpected and, if what happened had been identifiable injury, the event could have been described as personal injury by accident. He did not unexpectedly come into initial contact with pneumonia bacteria by washing the boilers, nor were the pneumonia bacteria intruded into his system thereby. There was no definite physical lesion producing a specific kind of disability, such as occurs in heat stroke. Disease-producing bacterial activity was stimulated by a favorable condition; the favorable condition was lowered physical resistance to cause of disease; the lowered physical resistence was produced by work in excessive heat; and in the last analysis the question was whether unexpected reduction of resistance to a bacterial disease, resulting from performing work under some misjudged or ignored circumstances or condition, constitutes personal injury by accident. The court is of the opinion that the question should be answered in the negative. Lowered vitality may come from heavy work, from fatigue, from long hours of work, and from a great variety of other causes which expose a workman to pneumonia and other diseases. The result is that there is a twilight zone between clear personal injury by accident, which is covered by the compensation act, and sickness, which is not covered. In this case it was proposed to dispense with hurt, and make debility alone stand for injury, in the sense of the statute.

Society Proceedings

COMING MEETINGS

American Pathological Society, St. Louis, Dec. 27-29. Dr. Wade H. Brown, Rockefeller Institute for Medical Research, New York, Sec'y.

American Physiological Society, St. Louis, Dec. 27-29. Dr. Charles W. Greene, University of Missouri, Columbia, Mo., Secretary.

American Society of Biological Chemistry, St. Louis, Dec. 27-29. Dr. Victor C. Myers, New York Post-Graduate Medical School, New York, Secretary.

Association for Research in Nervous and Mental Diseases, New York, Dec. 27-28. Dr. Sanger Brown, 2d, 173 E. 70th St., New York, Sec'y.

District of Columbia, Medical Society of, Washington, Jan. 2. Dr. C. B. Conklin, Medical Science Bldg., Washington, Secretary.

Isthmian Canal Zone, Medical Association of, Ancon, Dec. 21. Dr. J. J. Moore, Ancon Hospital, Ancon, Secretary.

Porto Rico, Medical Association of, San Juan, Dec. 14-16. Dr. Augustin R. Laugier, Box 1117, San Juan, Secretary.

Sioux Valley Medical Association, Sioux City, Iowa, Jan. 22-24. Dr. Ralph M. Waters, 107 Gilman Terrace, Sioux City, Iowa, Secretary.

Society of American Bacteriologists, New Haven, Conn., Dec. 27-29. Dr. J. M. Sherman, Box 184, Washington, D. C., Secretary.

Current Medical Literature

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

166: 469-624 (Oct.) 1923

*Erythremia (Polycythemia Rubra Vera). G. R. Minot and T. E. Buckman, Boston.—p. 469.
*Studies of Capillaries and Blood Volume in Polycythemia Vera. G. E. Brown and H. Z. Giffin, Rochester, Minn.—p. 489.
*Curative Treatment by Splenectomy of Chronic Thrombocytopenic Purpura Hemorrhagica. N. E. Brill and N. Rosenthal, New York.—p. 503.
*Suprarenal Hemorrhage in Infancy. M. A. Rabinowitz, Brooklyn.—p. 513.
*Phenoltetrachlorphthalein Test as Means of Determining Liver Function. J. Friedenwald and W. H. Gantt, Baltimore.—p. 519.
Physiology of Extrahepatic Biliary System. Application to Surgical Therapy. C. G. Heyd, New York.—p. 526.
Quantitative Determination of Enzyme Activity in Duodenal Fluids. C. W. Lueders, O. Bergeim and M. E. Rehfuss, Philadelphia.—p. 535.
*Antipneumococcus Serum in Lobar Pneumonia. C. N. B. Camac, New York.—p. 539.
*Juvenile Paresis: Twenty-Three Cases. J. V. Klauder, Philadelphia, and H. C. Solomon, Boston.—p. 545.
*Case of Meningococcic Meningitis Following Head Injury. DeW. G. Richey and T. R. Helmbold, Pittsburgh.—p. 559.
Pulmonary Segment Reflexes. J. G. M. Bullowa, New York.—p. 565.
Cardiodynamics of Arterial Hypertension. A. R. Elliott, Chicago.—p. 576.
Congenital Malformations of Aortic and Pulmonary Valves. J. P. Simonds, Chicago.—p. 584.

Erythremia.—Certain aspects of erythremia are presented by Minot and Buckman from a study of fifteen cases. Three cases are recorded in which, after a polycythemia for many years the patients developed anemia coincidently with a further increase in the size of the spleen and a leukemic blood picture. One of these cases was examined postmortem. The spleen, liver and bone marrow showed a hyperplastic blood formation similar to that seen in myelogenous leukemia.

Polycythemia Vera.—Seven cases of polycythemia vera were studied by Brown and Giffin. In six of these in which a definite diagnosis of polycythemia vera could be made, the nail fold capillaries revealed marked engorgement of either one or both capillary limbs. In one case in which the diagnosis was less definite, only slight engorgement was observed. The venous side of the capillary loop was usually more markedly distended than the arterial. In twenty-seven supposedly normal controls, the average total length of the capillary loops was 0.368 mm.; in cases of polycythemia vera it was 0.602 mm. The measurements of velocity of flow indicated a very definite decrease in the rate of flow in polycythemia vera. Estimation of the blood volumes in these patients revealed marked increases of cell volume and total blood volume. The relationship of these observations to certain features of the disease is considered.

Splenectomy in Purpura Hemorrhagica.—On the basis of clinical results, Brill and Rosenthal feel justified in saying that splenectomy in this disease is a life saving measure and should be employed in all grave cases of chronic thrombocytopenic purpura. It saved the lives of their two patients. There is considerable evidence to believe that splenectomy is also curative.

Suprarenal Hemorrhage in Infancy.—Rabinowitz reports the clinical features and necropsy findings in two cases. He states that an acute illness in a previously healthy child, which is rapidly followed by purpura and collapse should, in the absence of signs pointing to meningococcic infection, be sufficient for diagnosis.

Phenoltetrachlorphthalein Test of Liver Function.—Friedenwald and Gantt are of opinion that this test is a valuable means of determining liver function. It has proved useful as a means of checking the technic of nonsurgical biliary drainage. It is also of value in the diagnosis of cirrhosis and carcinoma of the liver and obstruction of the common duct from stone or tumor.

Antipneumococcus Serum in Lobar Pneumonia.—The mortality of all types of lobar pneumonia (municipal and military), nonepidemic, treated with Type 1 serum was 13.9 per cent.; among the cases treated without serum it was 29.8 per cent. Serum administered in the first twenty-four to thirty-six hours offered the best prognosis.

Juvenile General Paralysis.—Klauder and Solomon emphasize that the clinical picture of general paralysis in juveniles is unlike that of the adult. Many juvenile general paralytics pass as cases of epilepsy or idiocy with epilepsy. In the light of present knowledge the status of an epileptic or feebleminded congenital syphilitic cannot always be defined accurately in the absence of a spinal fluid examination.

Traumatic Meningococcic Meningitis.—An instance of meningococcic meningitis with recovery in a boy of 12 within thirty hours after an injury to the head, producing commotio cerebri and probably minute lacerations of the brain and rupture of intracranial capillaries, is reported by Richey and Helmbold. While it is possible that the occurrence of the meningitis and the trauma were coincidental, nevertheless, the evidence indicates that the injury predisposed to the meningeal localization of the bacteria; these could have gained entrance readily to the blood stream through the injured nasopharyngeal lining, from whence they were carried, hematogenously, within a skull in which the pressure relations had been disturbed, a locus minoris resistentiae had been established, and rupture of capillaries in all probability had occurred.

Archives of Dermatology and Syphilology, Chicago

8: 461-596 (Oct.) 1923

*Application of Warthin-Starry Silver-Agar Method to Demonstration of Spirochaeta Pallida in Spinal Fluid by Means of Coagula Obtained by Alzheimer Method. A. S. Warthin, R. C. Wanstrom and E. Buffington, Ann Arbor, Mich.—p. 461.
*Bismuth in Treatment of Syphilis. L. K. McCafferty, New York.—p. 469.
Hereditary Pigmentation of Leg Associated with Atrophy. M. F. Engman, St. Louis.—p. 483.
*Lupus Erythematosus Acutus Disseminatus. W. E. Robertson and J. V. Klauder, Philadelphia.—p. 487.
Acquired Lymphangioma of Vulva Secondary to Tuberculous Obliteration of Inguinal Glands. J. H. Stokes, Rochester, Minn.—p. 498.
Vitiligo and Alopecia Areata Associated with Severe Hyperthyroidism. S. Ayres, Jr., Los Angeles.—p. 502.
Inflammation. L. Török, Budapest.—p. 505.
Use of Chromogenic Indicators in Dermatology. H. Sharlit and W. J. Highman, New York.—p. 515.
School Physician as Dermatologist. H. G. Rowell, New Bedford, Mass.—p. 520.
*Blood Studies in Psoriasis. A. Strickler and E. Asnis, Philadelphia.—p. 523.
Red Light Treatment. H. E. Ahlswede, Hamburg, Germany.—p. 527.
Dermatitis from Oleic Acid. W. H. Hailey, Atlanta, Ga.—p. 530.
A Heavenly Meeting. W. J. Highman, New York.—p. 532.

Demonstration of Spirochetes in Spinal Fluid.—Evidence is presented by Warthin et al. which supports the statement that staining of sections of spinal fluid coagula by the Warthin-Starry method offers a valuable means for the demonstration of spirochetes in spinal fluid, serums or other fluids in which the organisms may be present, either in small or large numbers, but especially in the former case. In albuminous fluids in which the spirochetes occur in small numbers, the concentration of the organisms into the albuminous clot by means of the centrifuge is a valuable aid in determining their presence in the fluid.

Bismuth in Treatment of Syphilis.—The preparation used by McCafferty in treating twenty-five cases was potassium and sodium tartrobismuthate. From twelve to sixteen injections, given every four days, comprised a course. Each ampule contained approximately 2 c.c., or 20 cg., of active bismuth, in an oil suspension. The immediate action of bismuth in primary and secondary syphilis is as effective as that of arsphenamin, although it is slower in its action, both clinically and serologically. There seems to be a real indication for bismuth in Wassermann-fast patients, as well as in patients who have an idiosyncrasy to arsenic. Central nervous system syphilis gives evidence of responding to bismuth as well as it does to intravenous injections of arsphenamin, but the time has been too short to draw any definite conclusions. Stomatitis and local pain from injections are negligible factors. Arsenic, bismuth and mercury may be used in treating syphilis, either in combination or separately. Routine urinalysis should be made every month.

Acute Disseminated Erythematous Lupus.—The case reported by Robertson and Klauder is that of a woman who presented an acute lupus erythematosus of the type described by Kaposi as "erysipelas perstans facei." The patient had in addition the usual accompanying symptoms—arthritic pains, albuminuria, irregular and remittent temperature prostration and delirium—and the condition finally resulted in death. The case is reported because of the extraordinary association of a disseminated telangiectasis with cutaneous hemorrhages. The occurrence of disseminated telangiectasis in a patient with acute lupus erythematosus is said not to have been recorded previously in the literature.

Blood Studies in Psoriasis.—A marked lymphocytosis occurred in 54 per cent. of the blood smears of the patients with psoriasis studied by Strickler and Asnis. The lymphocytosis was always at the expense of the polymorphonuclear leukocytes, the other white blood cells being found in practically normal proportions. The study of the blood smears for some form of spirochete, using a special staining method, yielded only negative results.

Archives of Ophthalmology, New Rochelle, N. Y.

52: 417-524 (Sept.) 1923

Recurrent Paralyses of Eye Muscles with Especial Reference to Ophthalmoplegic Migraine. A. Duane, New York.—p. 417.
New Method of Preventing Postoperative Intraocular Infections. Report of 1,250 Cases. G. H. Bell, New York.—p. 436.
Congenital Oculofacial Paralysis. D. B. Kirby, New York.—p. 452.
Experiences Working with Dr. Barraquer in Barcelona. W. McLean, New York.—p. 460.
Dermoid of Cornea. T. H. Butler, Birmingham, England.—p. 469.
Report of a Case of Purpura Hemorrhagica. M. Cohen, New York.—p. 471.
Subperiosteal Abscess in Floor of Orbit. A. Knapp, New York.—p. 475.
Report of British Ministry of Health on Causes and Prevention of Blindness. P. G. Doyne, London.—p. 478.

Boston Medical and Surgical Journal

189: 629-670 (Nov. 1) 1923

*Germanium Dioxid as Remedy for Anemia. G. R. Minot and J. J. Sampson, Boston.—p. 629.
Effect of Traction on Spinal Column and on Intraspinal Pressure. M. P. Rucker, Richmond, Va.—p. 639.
Fee List from Papers of Archelaus Green Smith, M.D. S. Cobb, Boston.—p. 641.

Germanium Dioxid as Remedy for Anemia.—The observations made by Minot and Sampson show that germanium dioxid given intravenously or intraperitoneally is relatively nontoxic even in large doses. Their conclusions regarding the erythropoietic action and therapeutic value of this substance are divergent from those of other authors. No evidence was obtained by them suggesting that germanium dioxid has the power to increase blood formation or that it exerts any significant effect on the health of anemic individuals. Consequently, the drug seems to be of no value in the treatment of anemia.

Colorado Medicine, Denver

20: 229-254 (Sept.) 1923

Advantages and Purposes of Organized Medicine. M. Black, Denver.—p. 237.
Relation of Municipal Administration to Public Health. J. W. Amesse, Denver.—p. 239.
Changes in Kidney Function (Clinical Nephritis) and Changes in Kidney Tissue. A. G. Ellis, Colorado Springs.—p. 243.
Cancer of Mouth. W. W. Grant, Denver.—p. 248.
The Physician. H. G. Maul, Denver.—p. 251.

Florida Medical Association Journal, St. Augustine and Jacksonville

10: 95-124 (Oct.) 1923

Extreme Effects of Focal Infection. J. V. Freeman, Jacksonville.—p. 95.
Nonsurgical Drainage of Bile Channels. Use of Duodenal Tube as diagnostic and Therapeutic Agent in Chronic Biliary Disease. E. B. Milam, Jacksonville.—p. 97.
Diabetes Mellitus: Cardinal Principles of Treatment. J. S. McLester, Birmingham, Ala.—p. 102.
Some Hygienic Activities of Naval Air Station, Pensacola. H. W. Cole.—p. 104.
Professional Ethical Business Relation of Physician and Surgeon. R. R. Kime, Orlando.—p. 109.
Antitoxin Treatment of Case of Tetanus, with Recovery. J. S. Turberville, Century.—p. 113.
Aviation Medicine. J. R. Poppen.—p. 113.
Congenital Clubfeet. J. K. Simpson, Jacksonville.—p. 117.

Iowa State Medical Society Journal, Des Moines

13: 403-440 (Oct. 15) 1923

Some Practical Considerations of Physiology of Upper Respiratory Tract. H. I. Lillie, Rochester, Minn.—p. 403.
Pyloric Stenosis of Infancy. H. L. Brereton, Emmetsburg.—p. 415.
Chronic Indigestion in Childhood. J. L. Morse, Boston.—p. 422.
Ectopic Gestation. Report of Cases. T. W. Nuzum, Janesville, Wis.—p. 427.
Rachicentesis or Spinal Drainage in Convulsions. J. A. St. Onge, Sioux City.—p. 430.

Journal of Bone and Joint Surgery, Boston

5: 633-847 (Oct.) 1923

*Internal Derangements of Knee. J. K. Surls and R. B. Osgood, Boston.—p. 635.
*Periosteal Blood Supply and Healing of Fractures. A. Kolodny, Iowa City, Iowa.—p. 698.
Relaxation of Shoulder Following Body Injury. R. Hannond, Providence, R. I.—p. 712.
*Treatment of Bone and Joint Tuberculosis with Tuberculin and Heliotherapy. W. A. Clark, Pasadena, Calif.—p. 721.
Late Correction of Fracture Deformities of Femur. H. W. Orr, Lincoln, Neb.—p. 740.
Confessions of Internist Regarding Body Mechanics. R. I. Lee, Boston.—p. 747.
Chart for Standardization of Body Mechanics. R. I. Lee and L. T. Brown, Boston.—p. 753.
New Method of Recording Posture. N. W. Fradd, Boston.—p. 757.
*Actinomycosis and Blastomycosis of Spine. C. A. Parker, Chicago.—p. 759.
Treatment of Obstetric Brachial Paralysis. Report of Fifty Cases. S. W. Boorstein, New York.—p. 778.
*Gas Infection with Compound Fracture and Bridging of New Bone without Bone Transplant. L. A. O. Goddu, Boston.—p. 804.
Treatment of Intracapsular Fracture of Hip by Whitman Method. L. A. O. Goddu, Boston.—p. 808.
*Operation for Correction of "Drop-Foot." W. C. Campbell, Memphis, Tenn.—p. 815.

Internal Derangements of Knee.—The report made by Surls and Osgood is based on 181 operations. The external semilunar cases all had very satisfactory results, except one, in which the result could not be ascertained, as the patient developed a fresh trouble after operation. Loose body joint cases gave the next most satisfactory result, closely followed by the internal semilunar cases. The results in the fringe and fat cases were not nearly so satisfactory, and in the hypertrophic bone cases there were no very satisfactory results. A suggested outline for making records of internal derangements of the knee is presented.

Periosteal Blood Supply and Healing of Fractures.—The experiments made by Kolodny prove that destruction of the periosteal blood supply leads to nonunion of fracture. Endosteal callus does not prevent pseudo-arthrosis when periosteal callus formation is retarded. The claim that grafted periosteum does not always produce bone is said to be unfounded. Periosteum of an adult animal plus reactive stimulation is equal to periosteum of a young animal. Reactive stimulations which are able to change the latent capacity for bone formation of the adult periosteum into an active stage are fractures, trauma and slight infections of the bone.

Tuberculin and Heliotherapy in Treatment of Bone and Joint Tuberculosis.—Conservative and hygienic treatment of tuberculosis of the bones and joints is urged by Clark. Rest, heliotherapy, tuberculin and general hygiene, he says, are the methods of most importance in children. Clark uses the bouillon filtrate (B. F.) of tuberculin, the beginning dose being $\frac{1}{20000}$ mg., injected subcutaneously. The maximum dose of 0.01 mg. is reached after about three months' treatment. In three cases under tuberculin treatment the temperature was more regular and lower than it was before treatment was begun. Leukocytosis was stimulated in two of the three cases. The course of the disease is shortened and the patient's general condition is better under heliotherapy than without it.

Actinomycosis and Blastomycosis of Spine.—One case of each type is reported by Parker. He says that actinomycosis and blastomycosis of the spine are extremely malignant conditions for which virtually nothing can be done in the way of treatment. The mortality is 100 per cent.

Bridging of Gap in Radius by New Bone Without Bone Transplant.—In Goddu's case a 3 inch gap in the lower end of the radius became bridged over without aid in about three months in spite of an original gas bacillus infection, which was the reason for not transplanting bone.

Operation for Correction of Drop Foot.—In a large per cent. of paralytic feet it is necessary to remove bone for the purpose of the correction of deformity and stabilization of the midtarsal region. These particles of spongy bone are employed by Campbell as transplants in order to block plantar flexion.

Journal of Laboratory and Clinical Medicine, St. Louis

9: 1-70 (Oct.) 1923

*Toxemia of Severe Superficial Burns. B. Robertson and G. Boyd, Toronto.—p. 1.
*Pharmacology of Benzyl Alcohol and Its Esters. C. M. Gruber, St. Louis.—p. 15.
*Tartar Emetic. W. G. Christiansen and A. J. Norton, Boston.—p. 34.
Clinical and Laboratory Procedures in Pediatrics. A. Levinson, Chicago.—p. 37.
*Importance of Suprarenals in Action of Certain Alkaloids. C. W. Edmunds and P. C. Lloyd, Ann Arbor, Mich.—p. 45.
Chemistry of Blood and Cerebrospinal Fluid. N. G. Barrio, Rochester, Minn.—p. 54.
*Warning Against Use of Arsphenamin in Treatment of Syphilis in Hemophilia. J. Rosenbloom, Pittsburgh.—p. 57.

Cause of Death in Superficial Burns.—The cause of death in superficial burns was made the subject of an experimental study by Robertson and Boyd. Skin, subcutaneous tissue and muscle burns were produced in anesthetized rabbits. Typical symptoms, with shock, followed the production of the burn in all cases. These facts emerge: Death from burning occurring within the first twenty-four hours is practically always due to primary shock; later than this, it is due to toxic shock. There is a toxin produced in burned tissue, in larger quantities in skin burn, which circulates in the blood, either in or absorbed by, the red blood corpuscles, and which causes the symptoms seen in bad superficial burns, and in some cases death. Extracts of burned skin were found to be toxic. Extracts of skin burned post mortem were innocuous. The contents of burn blisters are not toxic. That there is increased protein catabolism in burns was evidenced by the increase in the nonprotein nitrogen and urea nitrogen of the blood. Whole citrated blood from burn cases is toxic. The blood serum is not toxic. Solutions of the corpuscles properly treated are more toxic than whole blood. The toxic substance consists of two portions, one of which is thermostabile, diffusible and neurotoxic; the other is thermolabile, colloidal and necrotoxic. Chemically, the toxin consists of primary and secondary proteoses. No evidence of the production of antibodies against the burn toxin could be found.

Pharmacology of Benzyl Alcohol and Esters.—No change in blood pressure was observed by Gruber in dogs when benzyl alcohol, benzyl acetate or benzyl benzoate was administered orally. The drugs of the nitrite series lower both systolic and diastolic blood pressures in normal, unanesthetized dogs when given by mouth, the same as when given clinically in human beings. Moderate doses of benzyl benzoate, 20 per cent. by volume in alcohol, produced a fall in blood pressure, probably due to the alcohol, not the benzyl esters. In susceptible, unanesthetized animals moderate doses of ethyl alcohol produced a fall in blood pressure. When given orally, benzyl alcohol, benzyl acetate and benzyl benzoate do not alter the pulse rate. The drugs of the nitrite series and ethyl alcohol, on the other hand, cause acceleration of the pulse due to the fall in blood pressure and resultant anemia of the cardiac centers. Benzyl alcohol and benzyl acetate possess emetic actions. This is also observed in some animals with benzyl benzoate. The action is due to local irritation of the alimentary canal and not to excitation of the vomiting center. Subcutaneous and intramuscular injections of the same dose as given by mouth in the same animal do not produce emesis. Moderate doses of benzyl alcohol and benzyl acetate and benzyl benzoate possess cathartic actions. This action is due to the local irritation by the drug. Benzyl benzoate possesses a very slight narcotic action when given in huge doses, 1 ml. per kilogram of body weight, in the dog.

Tartar Emetic Solutions Do Not Decompose.—The experiments made by Christiansen and Norton prove conclusively that solutions of pure tartar emetic in distilled water do not undergo decomposition under the conditions to which such a solution is likely to be exposed, and that the solution remains perfectly clear after sterilization. Strong acids and alkalies, and physiologic solutions, such as those containing calcium, must be kept out of the tartar emetic solutions as these cause decomposition.

Effect of Physostigmin on Erythrocytes.—Edmunds and Lloyd state that physostigmin given in small doses (0.5 mg. per kilogram) to dogs causes no characteristic change in the number of red blood cells, while with slightly larger amounts (0.7 mg. per kilogram) it markedly increases their number in the circulating blood. This increase seems to be due not to differences in distribution of the cells but to an action on the bone marrow.

Arsphenamin Contraindicated in Presence of Hemophilia.—A man consulted Rosenbloom for continual bleeding from a tooth socket following tooth extraction. His hemoglobin was 40 per cent.; red corpuscles 2,300,000, and Wassermann reaction 4 plus. Transfusion was done. The bleeding did not stop. Following the use of horse serum and transfusion, an injection of 0.6 gm. of arsphenamin was given. Within one hour following the injection all of his gums commenced bleeding at an alarming rate, the hemoglobin falling to 30 per cent. In spite of two more transfusions, the use of coagulose, horse serum, emetin, etc., the man continued to bleed, and two weeks following the injection of arsphenamin he died from anemia due to the hemorrhages.

Journal of Metabolic Research, Morristown, N. J.

3: 511-639 (April) 1923

Influence of Disturbance in Acid-Base Equilibrium of Blood on Renal Function and Pathology. W. deB. MacNider, Chapel Hills, N. C.
I. Effect of Acid and Alkaline Solutions on Normal Dogs.—p. 511.
Id. II. Effect of Acid and Alkaline Solutions on Nephropathic Dogs.—p. 539.
Id. III. Ability of Alkaline Solution to Protect Kidney Against Acid Solution.—p. 569.
Vitamin Potency of Cod Liver Oils. IV. Quantitative Estimation of Vitamin A. A. D. Holmes, Boston.—p. 583.
*Experimental Studies in Diabetes. II. Internal Pancreatic Function. 11. Relation of Suprarenals to Diabetes. F. M. Allen, New York.—p. 589.
*Id. 12. Diabetes and Phlorizin Glycosuria. F. M. Allen, New York.—p. 623.

Relation of Suprarenals to Diabetes.—Evidence obtained by Allen together with much already existing in the literature, is interpreted as proving that epinephrin is not a diabetogenic agent or a physiologic antagonist of insulin. In an animal with active diabetes, epinephrin injections caused a greatly increased excretion of both sugar and nitrogen, as compared with normal or diabetic controls. The most important feature was the extra destruction of protein continuing over a number of days, indicating that the increased glycosuria was not a mere sweeping out of preformed carbohydrate. No positive interpretation is established, but this result harmonizes with other evidence of an anabolic rôle of insulin, which is essential for upbuilding and maintaining the entire body mass, and of an abnormal susceptibility to breakdown of the tissues with active diabetes.

Diabetes and Phlorizin Diabetes.—Allen states that phlorizin poisoning is a radically different condition from diabetes. The word diabetes has long and thoroughly been established as the name of the condition which results from deficiency of insulin. It therefore appears confusing and scientifically unjustifiable to apply this name to a wholly different condition. Diabetic symptoms and death are not explainable wholly by the loss of sugar. Animals are much worse off when deprived of insulin than when merely deprived of carbohydrate. All the evidence seems to characterize diabetes not as a mere deficiency of sugar metabolism but as a specific defect of the total bodily nutrition.

Journal of Urology, Baltimore

10: 275-334 (Oct.) 1923

*Length of Survival and Function of Homogenous Kidney Transplants. C. S. Williamson, Rochester, Minn.—p. 275.
*Leukoplakia of Bladder. J. J. Valentine, New York.—p. 289.
Diverticula and Cysts of Urethra. F. P. Johnson, Baltimore.—p. 295.
Indications for Individual Treatment of Gonorrhea. T. V. Williamson, Norfolk, Va.—p. 311.
*Rare Case of Schistasis. E. Hess, Erie, Pa.—p. 321.

Spontaneous Expulsion of Papilloma of Bladder with Cure. E. R. Sisk, Madison, Wis.—p. 325.
Uterovesical Fistula. F. J. Parmenter and C. Leutenegger, Buffalo.—p. 329.

Length of Survival of Kidney Transplants.—Williamson asserts that autogenous kidney transplants will maintain life for weeks in a practically normal manner after the removal of the remaining normal kidney. The failure of the autogenous transplant seems to be due to atresia of the ureter, hydronephrosis and infection. The homogenous kidney transplant functions as does the autogenous one for a limited time, but this function continues for only a few days. The average length of function for the homogenous transplant has been four days, and the maximum, ten days. During the time that all three kidneys are functioning, two-hour test periods of the function show that the amount of urea, urea nitrogen and creatinin eliminated by the transplanted kidney is only slightly less than the combined output of both normal kidneys. The total amount eliminated by all three kidneys is more than was eliminated by the normal kidneys before operation. During the time that all three kidneys are functioning there is a sharp reduction of the nitrogenous elements of blood urea, urea nitrogen and creatinin. Williamson does not believe that the failure of the homogenous experiments can be attributed to mechanical factors.

Leukoplakia of Bladder.—In Valentine's case the lesions seemed to be limited to the bladder. From the studies and observation made, the opinion is offered, that leukoplakia usually exists in persons (1) who have been subjects of chronic infections of the urinary tract (in this instance, bilateral pyelonephritis), and (2) those who have an obstruction to the normal outlet of urine (contracture of vesical neck).

Rare Case of Schistasis.—The development of the child, in the case reported by Hess, was perfect until the umbilicus was reached. The entire lower segments of the lower abdomen had failed to close. There was some modified skin just below the umbilicus and two soft masses presented at the sides of the bladder, which was perfectly formed and capable of holding about 20 c.c. of urine. The sphincter control was excellent and there was a short urethra. Directly below was a tube about 6 cm. long which suggested a penis, connecting at the bladder with a larger mass which proved to be the sigmoid. This bowel mass presented through the definite labia which seemed to spring from the tissues at the tip of the coccyx. The roentgen ray showed complete absence of the pubic bones. The uterus was normally situated but its cervix presented blind between the bladder and the rectum and was totally confined inside the abdominal cavity. There was no obstruction to the passage of ingested food and the urinary organs functioned normally. The infant died on the eleventh day.

Michigan State Medical Society Journal, Grand Rapids

22: 403-460 (Oct.) 1923

Dangers and Duties of Hour in Medical Practice. J. L. Chester, Detroit.—p. 409.
Proper Scope of Pediatrics. T. B. Cooley, Detroit.—p. 413.
Training of Ophthalmologists and Otolaryngologists in Michigan. H. W. Pierce, Detroit.—p. 415.
Practical Aspects of Contracted Pelvis. E. D. Plass, Detroit.—p. 419.
Adenectomy Hemostatic Forceps. E. Amberg, Detroit.—p. 422.
The Medical Profession. W. N. Ferris, Big Rapids.—p. 422.
The Doctor. His Relation to Life and People. A. W. Wishart, Grand Rapids.—p. 427.

22: 461-494 (Nov.) 1923

*So-Called Arthritis Deformans. L. M. Warfield, Ann Arbor.—p. 461.
Diagnostic Value of Roentgen-Ray in Obstetrics. A. M. Campbell, Grand Rapids.—p. 465.
City Program for Control of Tuberculosis. A. M. Wehenkel, Detroit.—p. 469.
Auricular Fibrillation. F. N. Wilson, Ann Arbor.—p. 473.
Changes in Lungs and Bronchi Due to Upper Respiratory Disorders. J. S. Pritchard, Battle Creek.—p. 480.
Insolation Encephalitis. E. Amberg, Detroit.—p. 482.

Arthritis Deformans.—Warfield feels that a great deal can be done for these patients. First and foremost, a diagnosis should be made as early as possible and treatment started not half-heartedly, but with the idea that if these patients are not treated intensively, nothing is achieved. In the cases frankly the result of infection, the procedure would be as follows: removal of foci of infection at once; immobilization of joints that are inflamed; actinotherapy and dry heat. As the joints improve, Bier's hyperemia is at times valuable. Warfield has found that cincophen relieves the pain much better than any other drug, except, of course, morphin or codein. It is advisable also to push fluids and to give sodium bicarbonate. It seems to assist in relieving the condition. Cod liver oil is given as a routine in the infectious and atrophic cases. The patient should be fed with nutritious food of any kind. Buttermilk made with *B. bulgaricus* has seemed to help materially. The change in the intestinal flora produced by feeding large quantities of this lactic acid producing organism may account for its therapeutic value. Its true action is unknown. The beneficial result is often, however, very striking. In cases in which no focus of infection whatsoever can be found and there is fever, the first and most essential part of the treatment is absolute rest in bed. A highly nourishing diet, including bulgarian buttermilk, massage of the muscles, with only slight rubbing of the joints, actinotherapy, Bier's hyperemia, and dry heat, have given some results. Every effort should be made to prevent contracture deformities. When the cases are seen in the chronic crippling forms, especially those types in which there is no evident infection, the same treatment is given; that is to say, treatment by massage, dry heat, etc. For the chronic cases, in a good state of nutrition, a sojourn at one of the spas seems to relieve the condition. One form of treatment which Warfield uses extensively is nonspecific protein therapy. He has used, for the most part, typhoid vaccine, but has never seen a case permanently benefited by the treatment. While temporary benefit has resulted from the injections in the chronic cases, so that patients unable to use their joints before the injection move them around freely the day following the injection, the good result has not been more than temporary. For the hypertrophic forms heat in all forms seems particularly helpful, and lessened pain and increased motion follow long continued use of Bier's hyperemia. However, when bony changes have taken place, it is impossible to bring the parts back to their original condition. In many cases of all types in which there are great deformities, orthopedic treatment can straighten out the joints and sometimes by operation in the mono-articular forms enable the patients to get around again with some degree of comfort. In the cases of spondylitis, orthopedic jackets often give great relief.

Nebraska State Medical Journal, Norfolk

8: 341-380 (Oct.) 1923

Tumors of Breast. B. B. Davis, Omaha.—p. 341.
Diagnosis of Obscure Tuberculosis. M. J. Breuer, Lincoln.—p. 347.
Goiter Problem. J. C. Waddell, Beatrice.—p. 351.
Goiter Problem. W. A. Rush, Beatrice.—p. 354.
Case of Psychosis. R. H. Spradling, Lincoln.—p. 358.
Intussuception in Children. H. B. Hamilton, Omaha.—p. 362.
Transfusion of Blood for Hemorrhage and Shock. G. L. Pinney, Hastings.—p. 365.
Chronic Empyema with Bronchopleural Fistula. C. H. Waters, Omaha.—p. 369.
Some Undesirable Effects of Deep Roentgen-Ray Therapy. C. Kail, Lincoln.—p. 372.

8: 381-420 (Nov.) 1923

Fractures of Femur. J. E. M. Thomson, Lincoln.—p. 381.
Scientific Knowledge Logically Applied in Treatment of Acute Urethritis. A. D. Munger, Lincoln.—p. 385.
Problems of Epilepsy. H. A. Wigton, Omaha.—p. 387.
Chronic Infectious Arthritis. L. T. Hall, Omaha.—p. 392.
Methods of Treatment of Affections of Antrum of Highmore. A. G. Lueschen, Columbus.—p. 397.
Point of Contact. R. McConaughy, York.—p. 399.
Primary Mumps Infection of Lacrimal Glands. A. E. Wade, Lexington.—p. 404.
Injurious Effects of Improper Light on Eyes. L. B. Bushman, Omaha.—p. 406.
Vacuum Sinus. G. A. Griot, Chadron.—p. 407.
Rat-Bite Fever. Report of Case. E. S. Wegner, York.—p. 408.
*Case of Acute Lymphatic Leukemia with Secondary Infection of Tongue. Death. M. Emmert, Omaha.—p. 410.

Acute Lymphatic Leukemia with Secondary Infection of Tongue.—Emmert's patient died twenty-four days after the first symptom of the tongue involvement. The gross and microscopic findings in this case illustrated well the gangrenous process in the mouth or throat and the rather limited extent of lymphocytic infiltration of the viscera seen in

acute lymphatic leukemia. The acute lymphatic leukemia was manifested by moderate hyperplasia of the axillary, retroperitoneal and cervical lymph nodes, spleen and bone marrow, with lymphoid nodules of the lining of the large intestine, and a general decrease in red blood cells. There was gangrenous gingivitis with necrosis of the mandible and alveolar process of each maxilla: gangrene of the tip of the tongue; acute bronchopneumonia of the lower lobe of each lung with lymphoid nodules in the lower lobe of the left lung; obliterative pleuritis, fibrous pleuropericarditis, fibrous adhesions binding the liver to the transverse colon; coal dust pigmentation of the lungs; general marked anemia of all the viscera; anemia of kidneys and heart; edema of the soft structures of the anterior abdominal wall; a calcified nodule in the right lobe of the thyroid, and a slight hydrocele (right).

New York Medical Journal and Medical Record

118: 533-600 (Nov. 7) 1923

Treatment of Pyelitis by Ureteral Catheterization and Instillation of Kidney Pelvis. J. C. Hirst, Philadelphia.—p. 533.
Surgical Treatment of Puerperal Infection. H. B. Safford, New York.—p. 536.
Chemical Changes in Toxemia of Pregnancy. M. Kahn, New York.—p. 540.
Ingestion Glycosuria an Aid to Early Diagnosis of Pregnancy. C. F. Long and J. C. Hirst, Philadelphia.—p. 543.
Abortions. L. Drosin, New York.—p. 546.
Gumma of Cervix Uteri. H. A. Duncan, Philadelphia.—p. 550.
Partus Serotinus. W. A. N. Dorland, Chicago.—p. 551.
Meddlesome Obstetrics. J. R. McCord, Atlanta.—p. 552.
*New Theory of Menstruation. A. Young, Tallahassee, Fla.—p. 554.
Analysis of Twenty-Six Extrauterine Pregnancies. C. Mazer, Philadelphia.—p. 555.
*Use of Phloridzin in Early Diagnosis of Pregnancy. A. M. Hellman, New York.—p. 557.
Pus in Pelvis of Women. G. P. LaRoque, Richmond.—p. 559.
Importance of Palpation of Pelvic Ureters in Diagnosis of Abdominal Disease. D. W. Tovey, New York.—p. 563.
Significance of Inflammatory Ureteral Structure in Female. T. H. Cherry, New York.—p. 565.
*Nasal Dysmenorrhea. A. L. Levy, Jamaica, N. Y.—p. 568.
Differential Count of Appendicitis, Tubo-Ovarian Diseases and Infection of Uterine Cavity. A. J. Hinkelman, Oklahoma City.—p. 569.
Complete Congenital Absence of Vagina, Associated with Bilateral Hernias of Uterus, Tubes and Ovaries. D. Deutschman, New York.—p. 570.
*Postmortem Cesarean Section. M. J. Stone, New York.—p. 571.
New Type of Cesarean Technic. A. M. Judd, Brooklyn.—p. 572.
Dawn of Surgery. J. Wright, Pleasantville, N. Y.—p. 574.

Theory of Menstruation.—Young defines menstruation as a function established to meet the biologic requirements of fertilized ova. She says: Let us suppose that the fertilized ovum is discharged from the fallopian tube into the uterus; it is nothing more than reasonable to conclude that the menstrual function has had some share in preparing for its reception.

Use of Phlorizin in Early Diagnosis of Pregnancy.—Hellmann has used the technic of Kamnitzer and Joseph, who have tried to show that glycosuria can be produced artificially in the early months of pregnancy by the intramuscular injection of phlorizin. In the nonpregnant woman such an injection should not produce glycosuria, nor is it likely in those more than twelve weeks pregnant. Hellmann has made the test twenty-four times on twenty-three patients. In seventeen cases in which the tests were negative fifteen patients were found not pregnant but two were later found to be pregnant. In the seven cases giving positive results the patients were all pregnant.

Nasal Dysmenorrhea.—Levy reports what he terms a true case of nasal dysmenorrhea, occurring in a girl, aged 21. He used a 20 per cent. solution of cocain and advised having the intranasal genital spots cauterized.

Postmortem Cesarean Section.—Stone removed the baby in this case exactly one minute after death of the mother by cesarean section. Spontaneous respiration did not occur, but after vigorous efforts at resuscitation the child began to breathe rhythmically thirty minutes after delivery. It took feedings very well through a dropper; cried lustily, maintained a healthy pink color, and gave every indication that it might survive. However, fifteen hours later it became cyanotic, breathed with difficulty, and promptly died. The mother had been a nonipara and had a rheumatic heart, but died of bronchopneumonia.

Philippine Journal of Science, Manila

23: 237-305 (Sept.) 1923

Diagnoses of Hainan Plants. II. E. D. Merrill.—p. 269.
Composition of Pili Nut Oil. A. P. West and S. Balce.—p. 269.
Effect of Composition on Complete Hydrogenation of Some Philippine Oils with Nickel Catalyst. A. P. West and L. Gonzaga.—p. 277.
Some New Malayan Carabide, Especially Philippine. K. M. Heller.—p. 295.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

64: 255-353 (Oct.) 1923

*Pathology of Parkinsonian Syndrome Following Lethargic Encephalitis. Occurrence of Calcification. D. McAlpine.—p. 255.
Variations in Form of Reflex Movements, Notably Babinski Plantar Response, Under Different Degrees of Spasticity and Under Influence of Magnus and DeKleijn's Tonic Neck Reflex. F. M. R. Walshe.—p. 281.
*Cerebellar Localization. S. Ingvar.—p. 301.
*Occurrence in Osteitis Deformans of Lesions of Central Nervous System. Report of Four Cases. W. G. Wyllie.—p. 336.

Pathology of Parkinsonian Syndrome.—An account is given by McAlpine of the histologic findings in two cases of parkinsonian syndrome following epidemic encephalitis. The most constant findings were subacute inflammatory changes and recent perivascular hemorrhages. In one case, the substantia nigra showed marked degenerative changes, and in the other this area appeared to be normal; but large hemorrhages of arteriosclerotic origin in the basal ganglions considerably modified the negative findings in the substantia nigra in the second case. An account is given of fourteen similar cases reported in the literature, in all of which the substantia nigra was affected. Calcification in the anterior part of the globus pallidus was found in six cases of encephalitis, in one case as early as the fourth day of the disease. The calcification was found both in the vessel walls and in the form of globules. The occurrence of fat globules was noted in one case, and the relation between these and the calcified globules was studied. A short acount is given of other conditions in which calcification occurs in the brain, and the pathogenesis and significance of these changes are discussed.

Cerebellar Localization.—The conclusions reached by Ingvar from his intensive study of this problem are: the basal portions of the cerebellum, situated immediately above the fourth ventricle, are phylogenetically the oldest parts of the cerebellar cortex. Anatomic facts indicate that they are endowed with important functions. The most characteristic feature of these basal regions is that they receive fibers directly from the vestibular nerves. The histologic uniformity of the cerebellar cortex, even in the human cerebellum, indicates that function and organization of function are probably essentially the same in the whole organ. After lesions of the basal parts, motor phenomena known as "forced movements" occur. Since the forced movements resemble strongly those appearing after lesions of the vestibular apparatus, it is logical to regard the forced movements after cerebellar lesions as being due to disturbance of the vestibular innervation of these parts. Both the vestibular and cerebellar forced movements always take place in a definite plane of space. Since those associated with lesions of the anterior and posterior parts of the vermis resemble those produced by lesions of the vertical semicircular canal, it is logical to conclude that this canal is specially connected with these regions of the cerebellum. As the basal regions of the cerebellar cortex with their intimate vestibular connections are, in the literal sense of the word, a sort of calyx which encloses the major part of the cerebellum, which is developed later in phylogenesis, so the functions of the labyrinth may be considered to include in embryo those of the cerebellum. There is during phylogenetic development a tendency of regression of the vestibular influence on the cerebellum, whereas the spinal influence increases (strongly developed spinocerebellar tracts in higher animals). A long series of experiments on the cerebellum has shown that in animals the limbs are, at least to a considerable extent, represented in special regions of the cerebellar cortex (lobulus ansoparamedianus, Bolk), and that

the center of the forelimb is situated rostrad to that of the hind limb. Two cases are described by Ingvar which support the view that in the human cerebellum there is the same arrangement of the centers of homologous parts. In a case of tumor in the right lobulus biventer, the only clinical symptom was cerebellar ataxia of the right leg. In a case in which the right hemisphere was injured extensively by an operation, postmortem examination showed that a large part of the hemisphere (semilunar lobes, lobulus gracilis, part of lobus biventer) had been destroyed completely. The severe general ataxia that followed the operation disappeared gradually except in the right arm, though a slight disturbance of a cerebellar type was also noticed in the right leg.

Lesions of Central Nervous System in Osteitis Deformans.—Wyllie reports two cases of compression of the spinal cord in patients suffering from osteitis deformans, and two cases of atrophy of the optic nerves in patients whose skull was affected by osteitis deformans. In both cases diplopia also occurred, indicating most probably an injury of one or more of the ocular nerves. Several of the long bones were involved in one of these cases, and the vertebral column in the other.

British Medical Journal, London

2: 791-846 (Nov. 3) 1923

Anesthetics from Surgeon's Point of View. W. Trotter and W. I. de C. Wheeler.—p. 791.
Ventriculography as Aid in Localization of Intracranial Tumors. I. A. A. McConnell and G. Jefferson.—p. 796.
Anesthesia for Children. H. Sington.—p. 801.
Fatalities from Anesthetics. A. L. Flemming.—p. 804.
Anesthesia by Gas-Oxygen-Ethanesal and Gas-Oxygen-Chloroform-Ethanesal Combinations. H. E. G. Boyle.—p. 806.
Treatment of Hemorrhoids by Interstitial Injections. J. Dunbar.—p. 808.
Hemophthalmus in Association with Tuberculous Foci in Choroid. J. D. Cummins.—p. 809.
Appendicitis and Intussusception in Dog. Lymphaticostomy for Septic Peritonitis. J. D. Malcolm.—p. 809.
Cases Resembling Paralytic Ileus. W. W. Jeudwine.—p. 810.
Amyl Nitrite Poisoning. W. Broadbent.—p. 811.
Cholelithiasis with Situs Inversus. E. S. Frischmann.—p. 811.
Histology of Myeloma (Parasite?). T. H. Burlend and D. J. Harries.—p. 811.

British Journal of Ophthalmology, London

7: 497-544 (Nov.) 1923

Case of Implantation Cyst of Iris and Ciliary Body. W. B. Brownlie and H. Neame.—p. 497.
Intracisternal Injections in Treatment of Syphilitic Optic Atrophy. S. R. Gifford, Omaha.—p. 506.
Technic and Reaction of Intracranial Mercuric Bichlorid Injections. J. J. Keegan.—p. 522.
Hemianopia as Sole Clinical Feature in Untreated Secondary Syphilis. A. W. S. Sichel and A. R. Fraser, Cape Town, S. A.—p. 525.

Edinburgh Medical Journal

30: 422-564 (Oct.) 1923

*Generalized Osteitis Fibrosa. J. W. Dawson and J. W. Struthers.—p. 422.

Generalized Osteitis Fibrosa.—This paper by Dawson and Struthers is really a monograph based on extended study in the research laboratory of the Royal College of Physicians of Edinburgh. An endeavor is made to describe the essential histologic features in a case of generalized osteitis fibrosa, and to indicate the conceptions underlying the pathologic process involved in bone dystrophies. The view put forward relates osteitis fibrosa to an initial disturbance of the controlling activity of the bone cell over its calcium metabolism—an activity which is normally regulated by a hormone from the parathyroid glands. The process of decalcification is thus reduced to a defective functioning of the bone cell, following damage by an agent circulating in the blood or deranged hormone control. The damage to the bone cell may be caused by any one of the factors outlined above, especially toxins resulting from faulty tissue metabolism, and those elaborated in the intestinal tract. The automatic regulation of the supply of hormones, or, in other words, the call of the damaged bone cell for an increased supply of hormone, leads to hyperactivity of the parathyroid gland—a hyperactivity which results in hyperplasia, and in a possible perversion of the hormone, for in spite of its hyperplasia, the protective regulation of the activity of the bone cell is insufficient. The individuals and the bones affected may be related to factors inherent in the individual.

Indian Medical Record, Calcutta

43: 273-304 (Oct.) 1923

Osteopathy. D. Graham.—p. 273.
White Spots in Retina of Eye and Their Relation to Toxemias. R. N. Pradhan.—p. 275.
Dysenteries in Bengal. P. Ganguli.—p. 276.
Case of Tetanus Successfully Treated with Phenol Injections. K. L. Dharmadhikary.—p. 288.

Japan Medical World, Tokyo

3: 207-229 (Oct.) 1923

Experimental Investigation of Transfer of Hemolysin and Precipitin into Bile and Saliva of Immunized Animals. N. Kimura.—p. 207.
*Function of Suprarenal Cortex. Relation to Other Endocrine Glands. Y. Tokumitsu.—p. 212.
Prevention and Occurrence of Cholera in Japan. Y. Iimura.—p. 217.

Function of Suprarenal Cortex.—Tokumitsu is of the opinion that the suprarenal cortex is entirely independent of the medulla. Its function is antagonistic to that of the latter, and inhibits epinephrin secretion. The suprarenal cortex has a synergistic action with the pancreas for carbohydrate metabolism. Atrophy of the cortex is seen in the majority of cases of diabetes. It is especially marked when pancreatic changes are slight in severe diabetes. Glycosuria is caused when a large part of the cortex is removed even when the pancreas is not degenerated. The suprarenal cortex is functionally antagonistic to the thyroid. It is distinctly so for carbohydrate metabolism. The thyroid hypertrophies when the suprarenal atrophies. When hypertrophy is advanced, it shows the picture of struma Basedowii. The suprarenal cortex accelerates the pancreatic secretion. This accelerating action is the same even after the vagus or sympathetic nerves are cut. Its action is independent of secretin. This accelerating substance in the cortex lowers the blood pressure. It does not coagulate blood. It is soluble in water or alcohol. It is difficult to extract with ether from water solution. The active substance is not protein or fat. The cortex is functionally antagonistic to the anterior lobe of the hypophysis cerebri. It has no close relation with the eosinophil cells of the latter. The cortex is vital for life. Life can be maintained with one quarter of the cortex. The medulla has no influence on life. The thyroid and the suprarenal medulla are functionally synergistic. The thyroid extract accelerates epinephrin secretion. The anterior and posterior lobes of the hypophysis are antagonistic for epinephrin secretion. Pancreatic extract slightly inhibits the secretion of epinephrin. Extracts of the pineal body or of the corpus luteum accelerate the secretion of epinephrin. But thymus extract does not possess such action. When the cortex or the medulla of the suprarenal atrophies gradually gastric ulcer is not formed.

Journal of State Medicine, London

31: 501-550 (Nov.) 1923

Serologic Classification of Gonococci. W. J. Tulloch.—p. 501.
Epidemiology of Bubonic Plague in Great Britain, with Special Reference to Its Spread by "Pulex Irritans." W. A. Lethem.—p. 508.
Head Louse Problem. M. Gross.—p. 516.
Handling of Chemical and Bacterial Problems in Preserving Food. C. M. Dugdale.—p. 522.
Coordination of Measures for Control of Tuberculosis of Lungs. E. W. Hope.—p. 529.
Prophylactic Treatment of Dental Caries. S. W. Fisk.—p. 534.

South African Medical Journal, Johannesburg

19: 33-66 (Sept.) 1923

Management of Difficult Deliveries. J. McGibbon.—p. 33.
Blood Sugar and Diabetes. A. D. Stammers.—p. 38.
Johannesburg Municipal Venereal Clinic. H. Gluckman.—p. 48.
*"Vesicalization" of Stump of Cervix Uteri. E. O. Ashe.—p. 53.

Vesicalization of Stump of Cervix Uteri.—Following the removal of a fibrocystic tumor of the ovary, Ashe's patient developed a leakage of urine from the vagina, which could not be stopped by ordinary means. Finally, the cervix was thoroughly scraped out and "rawed" with sharp spoons, and was then firmly stitched up and entirely occluded by six deep catgut sutures, passed anteroposteriorly. Part of the cervix was, therefore, "vesicalized" or taken up into the bladder wall.

Paris Médical

229-240 (Sept. 29) 1923

*Epidemics of Jaundice. M. Garnier and J. Reilly.—p. 229.
*Sedimentation Test in Neurology. D. E. Paulian and Tomovici.—p. 234.
Labyrinthitis from Inherited Syphilis. Predescu-Rion.—p. 237.
*Aseptic Meningitis. R. Soupault and G. Boulanger-Pilet.—p. 239.

Epidemic Jaundice.—Garnier and Reilly observed 1,300 cases of acute jaundice. Superposed typhoid infection was present only in four of them. Different bacilli of the paratyphoid groups found in epidemics of jaundice are signs only of secondary infection. They discuss at length the reasons why they do not consider them as the causal agents of this very contagious malady. It seems to have some cause as yet unknown.

Sedimentation Test in Neurology.—Paulian and Tomovici found the speed of sedimentation of the blood increased in paralysis agitans. In postencephalitic parkinsonism, sedimentation was retarded.

Aseptic Meningitis After Intraspinal Anesthesia.—Soupault and Boulanger-Pilet report a case of meningitis following lumbar intraspinal anesthesia. The cerebrospinal fluid had a purulent aspect and contained many polymorphonuclear cells. Cultures were negative and the patient recovered in eight days.

Presse Médicale, Paris

31: 833-840 (Oct. 3) 1923

*Active Liver Congestion. M. Chiray and R. Lebègue.—p. 833.

Active Liver Congestion.—Chiray and Lebègue studied the active hepatic congestion after overeating, excessive drinking of water, and intestinal stasis. The liver becomes enlarged and sensitive to palpation. Headaches with somnolence and facial congestion after meals, temporary oliguria, and lowering of indican and glycuronic acid in the urine are the chief clinical manifestations.

31: 841-848 (Oct. 6) 1923

*Proteinic Blood Sugar. H. Bierry, F. Rathery and F. Bordet.—p. 841.

Proteinic Blood Sugar.—Bierry, Rathery and Bordet investigated in nephritis the changes of that part of the blood sugar which is firmly bound to proteins. This "proteinic blood sugar" is not identical with Lépine's *sucre virtuel*, and may be considered, like glycogen, as another kind of sugar reserve. The relation of the nitrogen of the blood proteins to their sugar is almost constant in the same species. It varies in healthy persons between 0.6 and 0.8 gm. per liter of plasma. They examined 100 persons with affections of the kidneys and found figures ranging from 1 to 3 gm. The increase was very marked in acute cases and in the last stages of chronic insufficiency. Though the highest figures were usually obtained in patients with a high urea content of the blood, there was no direct proportion between the proteinic blood sugar and the urea or Ambard's coefficient. Ligation of ureters is followed by a quick rise in azotemia, but only a slow rise in proteinic blood sugar. Azotemia indicates the impermeability of the kidneys. The increased sugar is a sign of a secondary disturbance of the general metabolism. The proteinic blood sugar does not depend on the proportion of serum proteins. A hemoclastic shock does not influence it.

Schweizerische medizinische Wochenschrift, Basel

53: 877-900 (Sept. 20) 1923

*Tuberculin Treatment. H. Sahli.—p. 877.
*Diabetes and Insulin. A. Gigon.—p. 882.
*Movements of Intestines. E. Lenz.—p. 887. Cont'd.

Tuberculin Treatment.—Sahli recommends intracutaneous injection of Beraneck's tuberculin as the best and least dangerous method of specific treatment of tuberculosis at present. Interesting quotations from the advertising of Ponndorff's scarification method in a daily journal are added.

Diabetes and Insulin.—Gigon added to the usual food of rabbits 40 to 50 gm. of glucose daily. The animals seemed to be normal for four to eight weeks. After this they decreased in weight, though the food was more than sufficient, and died within three to six months. In spite of the hyperglycemia, the liver and muscles contained scarcely any glycogen. A goat which drank every day 100 gm. of glucose in 200 c.c. of water died with signs of weakness after five and a half months. In the whole body only His' bundle and a few other fibers of the heart showed the presence of glycogen. The animals eliminated traces of sugar at times, but were not diabetic. It seems thus that the prolonged hyperglycemia inhibited the formation of glycogen. The animals had no ketonuria, but the reaction of the blood was more acid than normal ($p_H = 7 - 7.1$). It seems that insulin has the opposite tendency—to make the blood more alkaline. He does not believe that hypoglycemia is the cause of the death of animals given overdoses of insulin. The rabbit may die even if a subsequent injection of glucose increases the glycemia to above normal. After suprarenalectomy in animals and in some conditions in man an extreme hypoglycemia may occur without immediate death. He favors the theory of lowered sugar utilization in diabetes.

Movements of Intestines.—Lenz publishes a modification of the abdominal window method which allows direct inspection of the movements of the cat's colon.

53: 901-920 (Sept. 27) 1923

*Insulin Treatment. W. Löffler.—p. 901.
Foreign Bodies in Eyes. O. Knüsel.—p. 909.
Retinitis Pigmentosa and Color Blindness. R. Klainguti.—p. 910.

Insulin Treatment.—Löffler observed three cases of diabetic coma treated with insulin. The treatment came apparently too late in two of them, and neither bicarbonate nor glucose infusion helped in the first. The second patient had only a transitory amelioration. In the third case the coma disappeared, but the patient died from pneumonia in two days. He warns against the use of insulin in renal glycosurias.

Policlinico, Rome

30: 361-424 (Aug. 1) 1923. Medical Section

Pathology of the Kidneys. M. Ghiron.—p. 361.
*Carbon Dioxid Tension in Lungs. E. Pirondini and G. Albano.—p. 383.
*Ureosecretory Coefficient. L. Condorelli.—p. 397.
Treatment of Pyelitis. A. Cassuto.—p. 413.
*Glycuronuria. L. Baldari.—p. 420.

Carbon Dioxid Tension in Lungs.—Pirondini and G. Albano describe a new apparatus for determining the carbon dioxid tension of alveolar air. They use a saturated solution of sodium chlorid, because this does not absorb the gas as Villavecchia has found. They confirm the lowered carbon dioxid tension in renal insufficiency.

Extrarenal Factors that Modify the Ureosecretory Coefficient.—Condorelli believes that Ambard's ureosecretory coefficient is influenced by the quantity of blood flowing through the kidneys. This factor depends partly on the blood pressure (direct proportion), and the viscosity of the blood (indirect proportion). By introducing these figures into Ambard's formula, Condorelli believes that he has improved the estimation of insufficiency of the kidneys.

Glycuronuria.—Baldari found glycuronic acid more often in infants nursed by the mother than in the artificially fed. It was absent in athreptic infants, and appeared only in one case out of ten after repeated injections of camphorated oil.

30: 441-488 (Sept. 15) 1923. Surgical Section

*Tuberculous Arthritis Deformans. M. Ascoli.—p. 441.
Cavernous Angioma of the Parotid. E. Caporali.—p. 450.
Most Direct Access to Appendix. G. Carisi.—p. 460.
*Paraffin Drainage. O. Cignozzi.—p. 470.
*Kidney Fistulas. G. Trogu.—p. 481.

Arthritis Deformans of Tuberculous Origin.—The diagnosis wavered between a tuberculous process of the right knee and ordinary arthritis deformans in the case described in a woman, aged 42. There had been no fever, and the pains on arising were relieved by the use of the limb. The tuberculin skin test was positive, but complement fixation was negative. The joint was resected and recovery was soon complete. One typical tubercle was found in the resected portion; the arthritis deformans was evidently secondary.

Paraffin Drainage After Aseptic Operations.—Cignozzi expatiates on the peculiar advantages of a thread or cord or strip of gauze impregnated with paraffin for surgical

drainage, and especially after aseptic intervention. The paraffin-coated substance attracts the secretions from the depths, while it never sticks to the tissues. It behaves in every respect like natural linings of the body cavities.

Kidney Fistulas.—Trogu discusses the pathogenesis, diagnosis and treatment of fistulas into the kidneys when conditions do not forbid closing this outlet.

Prensa Médica Argentina, Buenos Aires

10: 281-304 (Sept. 20) 1923

*Present Status of Cardiac Arrhythmia. G. N. Martinez.—p. 281.
*Juvenile General Paralysis. J. J. Moyano.—p. 292.
*Tunnels in Amputation Stumps. G. Bosch Arana.—p. 296.

Arrhythmias.—Martinez calls his article "The Present Synthetic Conception of Arrhythmias." He takes up each of the five great groups of arrhythmias in turn, citing cases from his own experience to sustain his statements where he differs from certain authorities.

Juvenile General Paralysis.—Moyano published in 1914 a case of tabes in a child, and he now gives an illustrated description of a girl of 16 with typical general paralysis Such cases teach the necessity for special vigilance in specific treatment of children of syphilitic parents with a tendency to neurosyphilis.

Tunneling Short Amputation Stumps.—Bosch Arana shows the great advantage of having one or two tunnels through the muscles of a short stump to hold cords or straps which fasten to the interior of the artificial leg. By this means the prosthesis is under better volitional control, as he illustrates. A simple tunnel is all that is needed, but it should be as wide as possible, and be trained for its work by an interim crutch device, the strap connecting the tunnel with the crutch near the floor.

Revista de Medicina y Cirugía de la Habana, Havana

28: 587-622 (Sept. 10) 1923

Chrysops Guiterasi; New Species. W. H. Hoffmann.—p. 587.
*Dacryocystitis in the New-Born. J. L. Dehogues.—p. 594.

Dacryocystitis in the New-Born.—Dehogues relates that conjunctivitis in infants in Cuba is often merely a congenital dacryocystitis which has escaped detection. Catheterization of the lacrimal tract restored its permeability and cured at once in 75 per cent. of his fifty-one cases.

Semana Médica, Buenos Aires

1: 1189-1244 (June 28) 1923

The Basal Metabolism from the Clinical Standpoint. D. Speroni.—p. 1189.
*Purification of Drinking Water. C. A. Grau.—p. 1196.
*Tuberculin in Surgical Tuberculosis. A. Rodríguez Egaña.—p. 1198.
Pasteur's Life and Work. Gregorio Aráoz Alfaro.—p. 1203.
Insulin in Treatment of Diabetes. D. T. R. Davison.—p. 1212.
Belgian League for Mental Hygiene. F. Wilson.—p. 1225.

Purification of Drinking Water.—Grau advocates as rapid and certain in its effects, chemical sterilization with a mixture of iodin, sodium hyposulphite and alcohol. Tests of waters contaminated with millions of colon and typhoid bacilli and treated as described were always found sterile. Two solutions are used: Solution A is made by dissolving 8 gm. of iodin and 2 gm. of potassium iodid in 90 c.c. of alcohol in a 100 c.c. vessel, shaking occasionally; then 2 c.c. of glycerin is added. Solution B is made with 15 gm. of sodium hyposulphite and 45 c.c. of distilled water, in a similar vessel; when dissolved, 5 c.c. of glycerin is added, and then 40 c.c. of alcohol. These solutions keep well. To 1 liter of the drinking water is added 5 drops of solution A; after waiting twenty minutes, agitating the water occasionally, 5 drops of solution B is added. The water has no disagreeable taste, and the chemicals used are harmless or directly beneficial. The vessels used must not be of wood; wood absorbs the iodin. This method of sterilization is designed especially for rural school buildings without a good water supply.

Tuberculin Reactions in Bone and Joint Tuberculosis.—Rodríguez Egaña tabulates the response in 205 children with bone and joint disease to whom tuberculin tests were applied by the skin, intradermal and ocular technics, and the Moro percutaneous salve method. The findings are compared further with those in 100 healthy foundlings. In the 200 presumably tuberculous cases, the reaction was positive in all but 7; the skin test eliciting a positive response in 93.03 per cent.; the intradermal in 75.25; the ocular in 33.15, and the salve in 56.72. The negative response in 2 of the 7 not reacting was due to the advanced cachexia. In the 5 other negative cases, the course confirmed the probably nontuberculous nature of the hip-joint disease.

2: 133-184 (July 26) 1923

*Colpohisterectomy for Cancer of Cervix. J. Salvador.—p. 133.
Pylitis from Pyocyaneus Bacillus. G. Foley.—p. 147.
Pharmacodynamic Action of Certain Alkaloids. M. Soto.—p. 148.
Cystocele in Diverticulum of Bladder with Calculus. Chueco et al.—p. 158.
Dystocia from Rigidity Due to Acute Inflammation. Bazán.—p. 160.
Artificial Pneumothorax Invading Other Side. A. Cetrángolo.—p. 162.
What Are the Supports of the Kidney? C. de Sanctis.—p. 164.
*Width of Aorta in Inherited Syphilis. E. A. and J. J. Beretervide.—p. 166.

Treatment of Cancer of Uterine Cervix.—Salvador's illustrations show his method of inverting the cervix, with its cancer and the posterior vagina, after amputating the uterus above through an abdominal incision. He uses a long instrument with a toadstool-like tip, with prongs beneath. This is pushed up through the cervix stump, and it inverts the stump as the "invertor" is pulled out through the vulva, bringing cervix and vagina with it. The walls of the vagina are then sutured together behind, through the abdomen, and the whole inverted mass is cut off just below.

Large Diameter of Aorta in Inherited Syphilis.—The Beretervides state that the diameter of the ascending aorta is about 1.3 cm. in healthy children, but in syphilis it is abnormally large. They call discovery of this exaggerated diameter of the ascending aorta a new symptom of congenital syphilis, one easy to detect with the roentgen rays and with less chances of error than most signs. An abnormally dense shadow is likewise characteristic. Their article is based on 77 orthodiagrams taken of 52 children with inherited syphilis and compared with those from healthy children. In one child, aged 2½, the aorta measured 1.7 cm.; in others at the age of 4, 2.1 cm; at the age of 8 and 9, 2.2 cm.; at 13, 2.3 cm.

Archiv für klinische Chirurgie, Berlin

125: 417-632 (Sept. 22) 1923

*Cholelithiasis. H. F. O. Haberland.—p. 417.
*Total Resection of Cancerous Stomach. G. Kelling.—p. 458.
*Acute Dilatation of the Stomach. R. Girgensohn.—p. 463.
*Congenital False Diaphragmatic Hernia. O. Wiemann.—p. 471.
Sulphosalicylic Acid as a Disinfectant. T. v. Liebermann.—p. 482.
Shape and Position of Viscera. F. Walcker.—p. 490.
Position of Transverse Colon. P. Kuprijanoff.—p. 518.
Idem in Relation to Ileus. P. Kuprijanoff.—p. 535.
Action of Hexamethylenamin by the Vein. G. von Takáts.—p. 544.
*After Esophagogastric Anastomosis. J. Palugyay.—p. 554.
*Circumscribed Serous Meningitis. R. Demel.—p. 561.
Changes in Suprarenal Cortex in Peritonitis and Sepsis. G. Walter Deucher.—p. 578.
Chronically Recurring Appendicitis. E. Lick.—p. 597.
The Process of Arresting Hemorrhage. G. Magnus.—p. 612.
Hernia in Abdominal Wall. A. A. Kosyrew.—p. 625.

Cholelithiasis.—Haberland compares the recent literature on this subject (9 pages of bibliography) with the experiences in Frangenheim's surgical service at Cologne. Latent gallstones were found in 10.5 per cent. of the cadavers, and these "latent" concretions had misled the diagnosis in 27 of the 279 patients; in 17 others there was a concomitant surgical affection of the stomach. Cholelithiasis had been erroneously diagnosed in one case each of appendicitis, cancer of liver or bladder, and cirrhosis of the liver, and 3 cases of gastric ulcer. In differentiation, Läwen found a paravertebral injection of procain useful. With gastric ulcer, anesthetization of the seventh dorsal nerve abolished the pain; with appendicitis, of the first and second right lumbar nerves, while gallstone colic was arrested at once by thus blocking the tenth dorsal nerve.

Total Resection of the Stomach for Cancer.—In Kelling's two cases in men in the fifties, the esophagus was sutured to the jejunum. One lived in good condition for nine months and the other for five before metastasis developed. The men

felt full after eating, but their hunger was not sated. They had no pains, but they wanted to eat nearly all the time. Kelling ascribed this to the poor utilization of the food, the blood thus lacking its normal quota of nourishment.

Acute Dilatation of the Stomach.—Girgensohn insists on the necessity for distinguishing two groups: the cases of gastric atony or paralysis of the stomach, and the cases with acute occlusion of the duodenum. The two may be combined. In the case he describes, the young man died the fourth day after the onset of acute paralysis of the stomach. Necropsy revealed a perforation in a patch of gangrene at two points in the stomach. The record of seventeen deaths in twenty-two operative cases of acute paralysis of the stomach is not encouraging, although all agree that it is of functional origin. Nearly all the cases have occurred in persons eating a hearty meal after exceptionally long deprivation of food. When vomiting keeps up unusually long after an operation, this indicates the first stage of atony, and no food, especially in large amounts, should be given by the mouth. Postural treatment and the stomach tube should not be too long delayed. After paralysis is once established the stomach tube must be used until gastric functioning is entirely normal once more, perhaps for two weeks.

False Diaphragmatic Hernia.—Wiemann refers to congenital nonincarcerated diaphragmatic hernia, describing a case in a boy of 16 with hypoplasia of the lung on that side.

After Esophagogastric Anastomosis.—Palugyay gives the results of tests of a woman with rebellious cardiospasm compelling the short-circuiting of the passage. Heyrovsky's technic was applied, and the outcome is highly satisfactory. No regurgitation into the esophagus occurs even with extreme tests.

Serous Meaingitis.—Demel describes a case of circumscribed serous meningitis which presented the clinical picture of a brain tumor. In 48 cases he has collected, the process was in the posterior cranial fossa in 16. Recovery followed in 89.7 per cent. of the 39 operative cases. Trauma and infection are important factors, as also an angioneurotic tendency. In his case there seemed to have been a congenital defect in the sylvian region predisposing to cyst formation, but no symptoms had been observed until the man was 34. Then symptoms developed suggesting a brain tumor, and after three years puncture released 0.12 liter of clear fluid. The man died six days later.

Deutsches Archiv für klinische Medizin, Leipzig

143: 1-128 (Aug.) 1923

*Treatment of Diabetes with Roasted Starches. E. Grafe.—p. 1.
*Ventricular Fibrillation. S. de Boer.—p. 20.
Thyroid-Genital Insufficiency. L. Borchardt.—p. 35.
Diabetic Edema. W. Boenheim.—p. 46.
Associated Spleen and Liver Disease. G. Lepehne.—p. 53.
*Strophanthin in Chronic Heart Disease. Fraenkel and Doll.—p. 65.
*Treatment of Diabetics with Roasted Starches. E. Grafe and Otto-Martiensen.—p. 87.
*Blood Sugar in Diabetics Treated with Roasted Starches. H. Magin and K. Turban.—p. 97.
Lipoid Infiltration of Kidney. K. Heusler.—p. 106.
*Angina Agranulocytotica. A. Leon.—p. 118.

Treatment of Diabetes with Roasted Starches.—Grafe gave fifty-four diabetics different foodstuffs (bread, potatoes, rice, oats, etc.) which had been roasted or sautéed in fat in a pan over the fire for fifteen or twenty minutes, after having been cooked soft and drained dry. His six pages of tabulated details confirm the superiority of starches thus altered by roasting, the bread toasted brown. The action against acidosis was distinct.

Ventricular Fibrillation.—De Boer finds that ischemia of any part of the heart musculature predisposes the ventricle to fibrillation. An affection of the conducting system is not necessary.

Strophanthin in Chronic Heart Disease.—Fraenkel and Doll believe that the frequently feeble action of digitalis in aortic insufficiency is due simply to the fact that such patients do not get decompensated, as long as they have any appreciable amount of reserve heart energy. The authors are strongly opposed to the opinion that digitalis is dangerous in patients with infarctions, or hypertension. The only contraindication is the tendency to heart block, though digitalis is indicated in cases of complete block with heart insufficiency. They recommend intravenous injections of strophanthin. The amount which is necessary to obtain results is the best measure of the degree and prognosis of the insufficiency. The efficient and usual daily dose is 0.5 mg. of strophanthin. It is advisable, sometimes, to fraction this dose at first, and increase it later to 0.7 mg. The maximal dose is between 0.8 and 1.2 mg. but these require longer intervals.

Treatment of Diabetics with Roasted Starches.—Grafe and Otto-Martiensen did not find the expected increase in the respiratory quotient in most of their experiments on metabolism of roasted carbohydrates. This may be due to their slow absorption.

Blood Sugar in Diabetics Treated with Roasted Starches.—Magin and Turban found that roasted carbohydrates increased the blood sugar in diabetics much less than equivalent amounts of untreated carbohydrates.

Agranulocytosis.—Leon describes a case of an apparently new syndrome discovered a year ago by W. Schultz, who has since observed five other cases. The disease occurred in middle-aged and old women. It started with high fever and general malaise. Very soon ulcerations and gangrenes set in, affecting always the pharynx (especially the tonsils, sometimes the teeth, tongue, larynx and vagina). There were no hemorrhages. The spleen and liver were sometimes enlarged. The white cells were markedly decreased (1,800 down to "almost none" in 1 c.mm.) and the decrease affected especially the granulocytes (neutrophils and eosinophils). The blood platelets and red cells were normal, the antiproteolytic ferment of the serum was normal. The disease ended fatally in three to fourteen days. The bone marrow did not contain leukocytes nor myelocytes. Megakaryocytes were present. She sees in this a confirmation of Wright's theory of the origin of the blood platelets.

Deutsche medizinische Wochenschrift, Berlin

49: 1197-1228 (Sept. 21) 1923

*Vaccination Against Tuberculosis. P. Uhlenhuth.—p. 1197.
*Localization of Consciousness. N. P. Tendeloo.—p. 1200.
Digitalis Treatment. C. Hirsch.—p. 1202. Conc'n.
Treatment of Sterility in Women. R. Zimmermann.—p. 1206.
Malignant Brain Tumors. O. Kingreen.—p. 1209.
Acute Pancreatitis. E. Glass.—p. 1210.
Treatment of Wounds with Sulphur Dioxid. Rottsahl.—p. 1212.
The Meinicke Flocculation Test. Fey.—p. 1213.
Chemotherapy in Lepra and Tuberculosis. Bieling.—p. 1214.
Physicians and Social Insurance. S. Alexander.—p. 1216.
Insurance Company for Physicians. Bok.—p. 1216.

Vaccination Against Tuberculosis.—Uhlenhuth reports on his various attempts to induce immunity against tuberculosis. He injected animals with bacilli treated with antiformin or made fat-free. The failures convinced him that it is impossible to obtain immunity against tuberculosis with dead bacilli. Yet he failed just as completely when using old, almost avirulent living cultures. The serum from animals which had been injected with very large doses of such cultures (up to 60 gm.) was without any therapeutic or prophylactic value. He can find no experimental explanation for the favorable results obtained by Czerny with this serum.

Localization of Consciousness.—Tendeloo says that "a completely uninjured constellation of all the psychic factors is indispensable for clear consciousness." It presupposes a connection between all the psychic centers. A severe disturbance occurs only with extensive lesions.

49: 1229-1252 (Sept. 28) 1923

Hysteria. M. Rosenfeld.—p. 1229.
Vital Staining. L. Karczag and L. Paunz.—p. 1231.
*Extraction in Pelvic Presentation. E. Sachs.—p. 1233.
Scanzoni's Forceps. F. Klee.—p. 1236.
Multiple Bone Tumors. G. Mosczytz.—p. 1237.
Action of Tuberculin. H. Rieckenberg.—p. 1238.
Dold's Reaction in Spinal Fluid. G. Rochow.—p. 1239.
Periarteritis Nodosa. G. Kopp.—p. 1239.
*Epigastric Neuralgia. Philippsthal.—p. 1240.
Improved Technic for Ultraviolet Ray Treatment in Tuberculosis. Landgraff.—p. 1241.
Conscientious Objectors in England. H. Böing.—p. 1242.

Extraction in Pelvic Presentation.—Sachs discusses the modern technic of extraction in pelvic presentation. He

emphasizes the advantage of "letting the baby hang" between the attempts at extraction, so that it assumes the natural rotation, with which the extraction might have interfered. Every extraction should be aided by expression and good contractions of the uterus.

Epigastric Neuralgia.—Philippsthal has observed ten patients with epigastric pains which resembled those in ulcers of the stomach. Injection of procain into the painful spot gave relief. Addition of alcohol cured two, while five were refractory to all measures until relieved by excision of the painful spot, the seat of the neuralgia. In two of the cases, asthma accompanied the attacks and subsided at the same time (after operation in one case, conservative treatment in the other). In four of the cases a tendency to neurasthenia was manifest. Subsidence of the pain after injection of procain differentiated the neuralgia from organic disease.

Medizinische Klinik, Berlin

19: 1247-1278 (Sept. 16) 1923

*Progonic Triad. Westenhöfer.—p. 1247.
Abdominal Colic. Eschbaum.—p. 1255.
*Treatment of Gonorrhea. H. Hecht.—p. 1257.
*Reaction of Feces in Infants. E. Hainiss.—p. 1258.
*Training of the Feebleminded. E. Bormann.—p. 1260.
Abdominal Affections and Influenza. Esau.—p. 1261.
Hypnoid Neuroses. H. Rehder.—p. 1262.
Treatment of Flatfoot. E. Fischer.—p. 1264.
Treatment of Scabies. Schübel.—p. 1265.
*Reactivity of Asthenics. E. Baráth.—p. 1265.
Practical Gynecology. E. Runge.—p. 1266. Cont'n.
Present Status of Etiology of Tuberculosis. H. Gerhartz.—p. 1267.
Present Status of Skin Diseases. F. Pinkus.—p. 1268.

Progonic Triad.—Westenhöfer found in about 25 or 30 per cent. of necropsies three allied conditions, namely, lobulation of the kidneys, marked indentation of the spleen, and a funnel-shaped appendix. Such forms exist in some animals. It is interesting to note that the first two are found especially in different animals living in or near the water. Since these forms are normal in new-born children, he differentiates them from atavism, and has coined a similar Greek term for them: progonism. He began his research while residing in Chile and attributes the rarity of death from appendicitis, in spite of the noninterference of surgeons in the acute phase, chiefly to the funnel-shaped form of the appendix, though it is present only in 25 or 30 per cent. of the population and probably to a similar extent in Europeans. Neoplasms are another manifestation of progonism due to the inherent ability of single cells to reproduce and lead an individual life. We must look for explanation of these qualities to phylogenesis —to our unicellular ancestors. He believes that malignant tumors are just as good, if not better, evidence of such origin of man as embryology and comparative anatomy.

Treatment of Gonorrhea.—Hecht uses for abortive treatment of acute cases injections of a 5 per cent. protein silver salt solution with an anesthetic. Subacute cases treated with intramuscular injections of milk did well. The abortive treatment of acute cases must be stopped if the second portion of the urine is not absolutely clear, if the patient has much pain between the treatments, if the secretion becomes blood stained, or if there is edema of the meatus, pollakiuria or pain in the epididymis.

Reaction of Feces in Infants.—Hainiss examined the acidity of stools of breast-fed infants. He found the best increase in weight at a p_H between 5 and 6. Infants who did not increase in weight had a neutral or alkaline reaction, which is not favorable for the growth of *Bacillus bifidus*. Addition of sour skimmed milk corrected the condition.

Training of the Feebleminded.—Bormann examines the power of perception, concentration and practical sense in defective children. The first two qualities determine the possibility of school instruction, while the last is the important factor in the future usefulness of the feebleminded. He found his opinion confirmed by the development of forty-nine children. They had been examined for the first time in the years 1909 to 1916.

Reactivity of Asthenics.—Baráth found that persons with an asthenic habitus produced lower agglutinin titers after injections of typhoid vaccine than other patients.

Münchener medizinische Wochenschrift, Munich

70: 1217-1242 (Sept. 28) 1923

*Heart Palpitation. G. Katsch.—p. 1217.
*Treatment of Pleural Empyema. A. Herrmannsdorfer.—p. 1219.
Treatment of Meningeal Syphilis. W. Gennerich.—p. 1221.
*Growth of Bones. W. Müller.—p. 1225.
Germs in Organs. Huntemüller.—p. 1226.
Amyloid Degeneration of the Liver. H. Schrank.—p. 1227.
Atrophic Rhinitis. R. v. Scheven.—p. 1228.
Bullet in Pelvis. A. Lehrnbecher.—p. 1228.
Sedimentation of Erythrocytes. E. Trömner.—p. 1229.
*Esophageal Stenosis. A. Hirsch and J. Wagner.—p. 1229.
Treatment of Placenta Praevia. Opitz.—p. 1230.

Heart Palpitation.—Katsch observed in intelligent patients two kinds of palpitation: some felt it in the systole, others in the diastole. Combinations occur. He believes that it is always a sign of a disturbance of the harmony of the tonic and dynamic factors of the circulation.

Treatment of Pleural Empyema.—Herrmannsdorfer reports from Sauerbruch's clinic good results with pepsin treatment of fibrinous pleural empyemas. He infuses through the drainage tube up to 150-250 c.c. of the following solution: Pepsin, 20 gm.; hydrochloric acid, 2; phenol, 2; distilled water to 400 gm. He leaves the solution in the cavity for six to twelve hours. If all the fibrin is not then dissolved, the infusion is repeated. It is not impossible that the solution might dissolve fine adhesions, and change an encapsulated into an open pyothorax, although this did not occur in his experience. The whole drainage method is contraindicated in empyemas due to an abscess in the lung or neighboring organs, which require larger operations.

Growth of Bones.—Contrary to most authors, Müller finds that the longitudinal growth does not require functional stimuli. It is inhibited by pressure.

Esophageal Stenosis.—Hirsch and Wagner describe a case of recurring stenosis of the esophagus which was due to invagination of the organ.

Wiener klinische Wochenschrift, Vienna

36: 671-686 (Sept. 20) 1923

*Elimination of Dyes by the Stomach. P. Saxl and D. Scherf.—p. 671.
*Insulin and the Blood Pressure. Klemperer and Strisower.—p. 672.
Anetodermia in Relation to Acrodermatitis. G. Nobl.—p. 673.
Intraspinal Arsphenamin Treatment. E. v. Thurzó.—p. 675.
Artificial Abortion. K. Neuwirth.—p. 677.
Medical Welfare Work. K. Ullmann.—p. 679.

Elimination of Dyes by the Stomach.—Saxl and Scherf have continued their investigations on the excretion of dyes through the stomach. They found that only fat soluble dyes (methylene blue, neutral red) are thus eliminated. Those which are only water soluble (indigocarmin, congo red, fluorescein) do not pass into the gastric juice. The excretion has no particular localization. The only practical result was the discovery that the dye does not pass into the interior of the stomach in cases of complete achylia.

Insulin and the Blood Pressure.—Klemperer and Strisower found that an injection of 10 units of insulin lowers the blood pressure in diabetics with hypertension. The action is slow, and the pressure reaches its minimum in about two hours. In diabetics with normal blood pressure, a lowering of only 5 to 15 mm. of mercury was observed, which may be within the physiologic limits. Injections of epinephrin solution induced the typical increase in blood pressure without regard to a previous or simultaneous injection of insulin. The blood pressure was not lowered by insulin in normal rabbits in spite of hypoglycemia, nor in three cases of chronic nephritis with hypertension.

36: 687-704 (Sept. 27) 1923

*Blood Transfusion. K. Nather and A. Ochsner.—p. 687.
*Sex Papillae on the Labia Minora. B. Lipschütz.—p. 692.
*Gangrene in Lead Poisoning. F. Kazda.—p. 694.
History of Medicine. I. Fischer.—p. 696.

Blood Transfusion.—Nather and Ochsner describe and illustrate the technic of blood grouping, and Percy's transfusion method.

Sex Papillae on the Labia Minora.—Lipschütz found on the inner surface of the labia minora a crescent shaped group of

papillae resembling the fungiform papillae of the tongue. They appear between the twelfth and fourteenth years and contain many terminal bodies. He believes, therefore, that they are accessory organs of libido.

Gangrene in Lead Poisoning.—Kazda reports three cases of gangrene of the legs in young printers, aged 28 to 46. Although varices are a common occurrence in that trade, there were none in these cases. This confirms his observation that the formation of varices seems to require a good function on the part of the arteries.

Zeitschrift für klinische Medizin, Berlin

97: 189-482 (Sept. 20) 1923

Iodin and Production of Erythrocytes. G. Holler.—p. 189.
*Gas Metabolism. W. Arnoldi and J. Ferber.—p. 208.
*Chronic Septicemias. F. E. R. Loewenhardt.—p. 217.
*Hemolysis and Jaundice. K. Bingold.—p. 257.
*Nature of Nephrosis. V. Kollert.—p. 287.
Nycturia in Heart and Kidney Disease. O. Klein.—p. 312.
Pituitary in Relation to Metabolism. D. M. Rossiysky.—p. 334.
*Bedside Study of Hemogram. G. Ockel.—p. 338.
*Psychoneurotic Disturbances in Hyperthyroidism. R. F. Weiss.—p. 366.
Precipitation in Oversaturated Uric Acid Solutions. R. Kohler and R. Krüger.—p. 381.
Orthostatic Albuminuria. H. Uyeda.—p. 394.
*Auscultation of the Pulse. M. Reh.—p. 413.
Diagnosis of Lymphogranulomatosis. J. Weiss.—p. 444.
*Blood Volume Determination. A. Mendershausen.—p. 468.

Gas **Metabolism.**—Arnoldi and Ferber found practically identical changes of oxygen intake and carbon dioxid exhalation after injections of salts of calcium, sodium and potassium. The oxygen seemed to be better utilized; the carbon dioxid was lowered. They had occasion to observe an epileptic girl before the attack. The respiration was lowered about half an hour before and became progressively weaker, although the girl felt well. Respiration stopped almost entirely at the onset of the seizure.

Chronic Septicemias.—Loewenhardt uses the term *chronio-septicämie* for all chronic septicemias, like endocarditis, chorea, cholangitis, infectious nephritis, infectious neuritis, etc. Although his therapeutic measures failed, he believes that the correct diagnosis of the condition is important, not only to separate the condition from others, but also for proper treatment.

Hemolysis and Jaundice.—Bingold deals with the pathologic significance of the presence of hematin in the serum. It was found in pernicious anemia, puerperal eclampsia, gas infection and other rare conditions. It seems that the spleen and the reticulo-endothelial apparatus do not play an important part in this decomposition of hemoglobin.

Nature of Nephrosis.—Kollert examined the blood proteins in patients suffering from degenerative affections of the kidneys (nephrosis and chronic nephritis with preponderating changes in the tubuli). He found the fibrinogen increased up to nine times, the globulins fourfold, while urea, the end product of decomposition of proteins, was low. Similar conditions are found wherever the disintegration of tissues is increased (except in affections of the liver). He had found previously, with Starlinger, that albuminuria paralleled the changes in the fibrinogen content of the serum. Below a certain threshold of fibrinogen, no albumin passes in the urine. Previous affections of the kidneys lower the threshold. He considers that the disintegration of proteins is a cause of the increase in fibrinogen, and secondarily of albuminuria. Some lesion of the kidneys is also necessary. The change in the proportions of serum proteins in severe albuminurias is frequently accompanied by an increase of cholesterol in the serum. He found, with Starlinger, also a parallelism between the amount of fibrinogen and the tendency to edemas. All this is in accord with the Herzfeld-Klinger theory of the decomposition of cell proteins. This theory assumes that fibrinogen is the product first formed; this is followed by globulins, then albumins, and progressively finer dispersions. Certain acute forms of degeneration of the kidney, with necrosis, such as bismuth nephrosis, affect primarily the kidneys, and other tissues are only secondarily affected. In lipoid nephrosis, the affection of the kidneys is only a part of the whole affection of the organism. Nephritis gravidarum belongs to this group.

Bedside Study of Hemogram.—Ockel considers Schilling's modification of Arneth's method of quantitative differential blood count valuable.

Psychoneurotic Disturbances in Hyperthyroidism.—Weiss believes that psychic disturbances in patients with toxic goiters are not caused by the latter. They are only parallel symptoms of a degenerative constitution. Each can influence the other.

Auscultation of the Pulse.—Reh investigated the origin of the sounds heard distally from the cuff in Korotkow's method of determination of the blood pressure.

Blood Volume Determination.—Mendershausen found with the congo red method an average volume of blood corresponding to 7.5 per cent. of the body weight. The blood volume was below this average in anemias, and in corpulent and atrophic subjects.

Zentralblatt für Chirurgie, Leipzig

50: 1385-1416 (Sept. 8) 1923

*Dislocation of Semilunar Bone. Clairmont and Schinz.—p. 1386.
*Cerebral Anemia and Rapid Anesthesia. C. Ritter.—p. 1390.
Skull Sarcoma Cured by Operation. O. Langemak.—p. 1392.
Operative Treatment for Saddle-Nose. A. Réthi.—p. 1393.
Diagnosis of Intra-Abdominal Injury from Contusion. Grasmann.—p. 1397.
*Treatment of Patellar Fractures. B. O. Pribram.—p. 1398.
"Aspiration Catheterization" of the Bladder. F. Kroh.—p. 1401.

Conservative Treatment of Dislocation of Semilunar Bone.—Clairmont and Schinz bring out that dislocation of the semilunar bone is often a luxation of the hand around the semilunar bone which is twisted on its axis. Reduction is accomplished by extreme dorsal flexion, pressure being applied to the luxated semilunar from the palm, followed by extreme palmar flexion. Immobilization should be of short duration, and physiotherapy should be begun early. The prognosis is good.

Induced Cerebral Anemia as an Aid to Anesthesia.—Ritter recommends compression of the carotid arteries at the inner margin of the sternocleidomastoid muscles to hasten anesthesia with ether by producing cerebral anemia.

Operative Treatment of Fractures of the Patella.—Pribram recommends, unless there are pronounced contraindications, that simple fractures of the patella be sutured as soon as possible after the injury. He advocates flexion of the joint at a right angle after the operation.

Zentralblatt für Gynäkologie, Leipzig

47: 1441-1472 (Sept. 8) 1923

Simplified Artificial Pneumoperitoneum. O. Gragert.—p. 1441.
*Intracranial Serotherapy in Puerperal Tetanus. K. Fritsch.—p. 1445.
*The Corpus Luteum in Cows. A. Kaltner.—p. 1449.
*Treatment of Perforation of the Uterus. E. Schwab.—p. 1451.
Morphin as an "Antidote" in Scopolamin Poisoning. Strube.—p. 1460.

Puerperal Tetanus: Recovery Under Intracranial Serotherapy.—In Fritsch's case, tetanus antitoxin was injected subcutaneously, by lumbar puncture, and directly under the cerebral dura between the coronal and sagittal sutures. Enemas of magnesium sulphate were given, and the woman, aged 41, recovered. The tetanus had developed with a gradual onset the twelfth day after an abortion.

Studies on the Corpus Luteum in Gravid Cows.—Kaltner refers to Hofstätter's researches on rabbits and the resultant finding that there is only a loose connection between the number of impregnated ova in the uterus and the number of corpora lutea. To clear up this and other questions pertaining to the evolution and involution of the corpus luteum, Kaltner carried out a series of researches on slaughtered cows. In 295, or 98.3 per cent., of the 300 examined, the number of corpora lutea coincided with the number of fetuses in the uterus. In 1.7 per cent. there was an excessive number of corpora lutea. In every instance the corpus luteum was developed in the ovary that was connected by its fallopian tube with the gravid cornu uteri. In not a single case could migration of the ovum be proved.

Treatment of Perforation of the Uterus.—A purely conservative treatment of perforation of the uterus (rest in bed, ice-bag and opium), seems to Schwab to be strictly indicated only in cases in which: the perforation injuries are small; no

infection is present; the possibility of bacterial infection from a decomposed placental remnant is slight; hemorrhage into the abdominal cavity is inconsiderable, and the existence of a secondary lesion (intestine, bladder, ureter or good-sized blood vessel) can be excluded with certainty. If these conditions do not obtain, the indications for active intervention are present; delay means serious danger for the patient.

Zentralblatt für innere Medizin, Leipzig

44: 625-640 (Sept. 29) 1923

*Blood Pressure Quotients. P. Engelen.—p. 625.

Blood Pressure Quotients.—Engelen reviews the significance of the proportion of the systolic to the diastolic pressure, and the different quotients (Strassburger, Moritz, Vérut).

Casopis lekaruv ceskych, Prague

62: 1021-1048 (Sept. 29) 1923

Parasites in Coloboma of Macula. J. Janku.—p. 1021. Cont'd.
*Syphilitic Pituitary Cachexia. V. Jedlicka.—p. 1027. Conc'n.
Amentia. Heverоch.—p. 1042. Cont'd.
Whey. E. Glücksmann.—p. 1038. Cont'd.

62: 1049-1076 (Oct. 6) 1923

Radium Treatment of Cancer. J. Markl.—p. 1049.

Syphilitic Pituitary Cachexia.—Jedlicka describes a case of syphilis in an aged man. The secondary eruption spread over the greater part of the body and while it was still present gummas developed, about seven months after the onset of the secondary symptoms. The patient did not react to treatment and died from cachexia, which was apparently caused by a gumma in the pituitary gland. Eight photomicrograms illustrate the findings.

Acta Chirurgica Scandinavica, Stockholm

56: 207-307 (Oct. 3) 1923

*Pathogenesis of Gallstones. T. Rovsing.—p. 207.
*Destructive Processes in the Ischium. A. Odelberg.—p. 273.
*Solitary Cyst in Kidney. K. Nicolaysen.—p. 285.
Cholecystectomy with Immediate Suture. L. Norrlin.—p. 289.
Dislocation of the Hand. K. Nicolaysen.—p. 305.

Gallstones Cause, Not Result, of Infection.—Rovsing declares that gallstones are the most frequent cause—not the result—of stagnation of bile and infection of the biliary passages. In his 30 cases of jaundice from prolonged stasis of bile, as also in Fibiger's similar series of 32, there was not a trace of gallstone production. The cause has been mistaken for the effect. He presents data to sustain his assertion that in reality the gallstones form in the liver. They are the result of precipitation of black bilihumin calcium in the liver cells, and this occurs under the influence of some transient toxemia. The soft masses of pigment are evacuated into the bile capillaries. As they lodge or are swept along, they become coated with the normal elements of the bile, and with fibrin and blood as they irritate the walls of the bile passages. So long as the concretions lie quietly in the gallbladder, they cause no disturbance. When they begin to migrate and cause disturbance, they should be removed at once. The practical conclusion from his long research and his assertions that we hitherto have been mistaking the effect for the cause of gallstone disturbances, is that when pains, fever, jaundice and dyspepsia appear, they show that the gallstones are setting up inflammation, and call for immediate removal. To wait is to allow time for irreparable damage. Waiting was the logical procedure when we assumed that infection had preceded the gallstones. But if the gallstones precede infection, as he asserts, then the logical procedure is to clear them out as soon as irritation from their presence sets up inflammation. His plate shows the different phases of the formation of the gallstone. The black nucleus in the center testifies to the origin in the liver, and the toxemia of pregnancy explains the greater prevalence of gallstones in women, although toxemia of any origin may be responsible for the precipitation in the liver. In his 530 operative cases, 80.7 per cent. were in women. Search for gallstones in 7,447 cadavers at Copenhagen revealed them in from 8 to 25 per cent. (men from 4.9 to 19 per cent.; women, 11.27 to 31 per cent.). Gallstone disturbances are exceptional in men under 30, but from 5 to 12 per cent. of all women over 20 are subject to them. The strain of childbirth may mobilize quiescent stones, in addition to the impetus to stone production by pregnancy toxemias. (The article is in German.)

Destructive Processes in Ischium.—Odelberg describes four cases of a clinical picture, between the ages of 11 and 14, traceable to an inflammatory process inside the ischium and adjacent part of the pubic bone. The pains in hip and thigh and the limping suggested hip joint disease at first, but the roentgen ray showed only the focus in the ischium, and recovery followed clearing out this focus. Inoculation of guinea-pigs was negative.

Solitary Cyst in the Kidney.—The kidney tissue encircled the large cyst in the unmarried woman of 66, and Nicolaysen was able to detach it and shell out the cyst entire. The diameter was 12 cm., and a scrap of adherent kidney tissue showed that the cyst had no special capsule.

Finska Läkaresällskapets Handlingar, Helsingfors

65: 491-608 (Oct.) 1923

*Intestinal Infantilism. W. Pipping.—p. 491.
*Pathogenesis of Torticollis. A. Krogius.—p. 515.
*Myoma Operations During Pregnancy. O. A. Boije.—p. 530.
*Microscopic Specimens. H. Castrén.—p. 542.
*Myoma Operations. J. J. Chydenius.—p. 548.
Present Status of Insulin Treatment. O. Holsti.—p. 578.

Intestinal Infantilism.—Pipping describes the clinical picture of the severe chronic insufficiency of the digestive apparatus, in children past babyhood, which Herter calls intestinal infantilism. Pipping has encountered five cases in the last five years, and one was in the children's hospital for three years. Nothing suggesting inflammation was found in the intestines at necropsy, in one typical case. The pathologic findings were dilatation of the ventricles and fatty degeneration of the liver, with anemia of all the organs, and acute pneumonia. The extremely chronic course of the intestinal symptoms; the fluctuations in the weight, independent of external causes; the development of edema of neither cardiac nor renal origin; the lack of any influence from dietetic measures—all testify to a constitutional endogenous factor. Two of the six children had severe attacks of tetany—which is rare in Finland—with other signs of an intense spasmophilic diathesis; instability of the nervous system was evident in all. One of the children had pains in the hands and feet, insomnia, edema, micturition every half hour, lack of appetite, vomiting and loss of weight and strength, long before the intestinal symptoms became pronounced, and a younger sister presented a similar clinical picture. Only one of the six belonged to the laboring classes, and all were girls, between the ages of 2 and 5. Three have died, from inanition cachexia; they were "unnourishable." Two seem to be improving slightly at present as regards the nervous symptoms, but they will probably be stunted in growth. One of them seems to have nearly recovered; the symptoms had all been milder in this case. She improved on a diet of skimmed milk and meat juice at first, but the hemoglobin percentage was 40 (Sahli) on leaving the hospital after a year's stay.

Origin of Torticollis.—Krogius presents evidence to prove that muscular torticollis must be referred to an endogenous cause—some embryonal anomaly.

Conservative Operation for Uterine Myoma During Pregnancy.—In one of Boije's four cases, the pedunculated myoma, weighing 1,450 gm., growing from the fundus, was removed through an abdominal incision, at the fifth month of a normal pregnancy. The center of the tumor was necrotic. In all the cases the pregnancy proceeded unmolested to term.

To Mark Microscopic Preparations.—Castrén draws with a cutting diamond a series of lines on the back of the object glass, dividing it into squares. Any special point to be examined with the microscope can thus be readily located by its square, as in a map.

Treatment of Uterine Myoma.—Chydenius reviews the experiences with 322 operative cases of myoma, studying retrospectively the question whether they would have been amenable to radiotherapy. Only 40 per cent. might possibly have yielded to the roentgen rays. One death from heart failure during the operation might have been avoided if radiotherapy had been applied. One woman with only 8 per cent. hemoglobin recovered after removal of the myoma.